May 1995

PHYSICIAN PAYMENT REVIEW COMMISSION

Monitoring Access of Medicare Beneficiaries

No. 95-1

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2120 L Street, NW, Suite 200
Washington, DC 20037

Telephone: (202) 653-7220
Facsimile: (202) 653-7238

PREFACE

In accordance with the Commission's responsibilities under the Omnibus Budget Reconciliation Act of 1989, the Commission is submitting to the Congress its analyses and recommendations related to monitoring beneficiary access to care. It is also required to comment on the report of the Secretary of Health and Human Services on Medicare beneficiary utilization of services and access to care. The Commission will submit comments on the Secretary's report after it is issued.

Kevin Hayes was the Commission staff member principally responsible for this report. Christopher Hogan's earlier work in developing the framework for the Commission's access monitoring activities continues to be reflected in this report. In addition, Dr. Hogan managed the project with RAND on the clinical indicators of access presented in Chapter 2 and conducted the claims analysis for that project. Sally Trude and David Colby were responsible for analysis of the Medicare Current Beneficiary Survey. Donna Farley and Elizabeth Docteur prepared the chapter on Medicare HMOs and access. Christine Cushman and Heather Gold also contributed to preparation of this report.

The Commission's Advisory Panel on Access provided valuable guidance to the staff on methods and interpretation of results.[1] The Commission would also like to thank the following individuals for their help on various aspects of this report: Arlene Turner and Jeff McCartney of Social and Scientific Systems; staff of the Health Care Financing Administration's (HCFA) Bureau of Data Management and Strategy; Franklin Eppig of the HCFA Office of National Health Statistics; and Steven Asch and Elizabeth Sloss at RAND.

[1] Panel members are Perham Amsden; Geraldine Dallek; Lynn Etheredge; Harold P. Freeman, M.D.; Lucian Leape, M.D.; Stephen H. Long, Ph.D.; Nicole Lurie, M.D.; Ira Moscovice, Ph.D.; Martin F. Shapiro, M.D.; Richard B. Tompkins, M.D.; and Barbara Yawn, M.D.

Gail R. Wilensky, Ph.D., Chair[1]
Senior Fellow
Project HOPE
Center for Health Affairs
Bethesda, MD

Linda H. Aiken, Ph.D.
Director, Center for Health Services and Policy Research
Trustee Professor of Nursing and Sociology
University of Pennsylvania
Philadelphia, PA

Richard V. (Dick) Anderson
Vice President, Health Policy
Kaiser Permanente Medical Care Program
Oakland, CA

Giles G. Bole, M.D.
Dean
University of Michigan Medical School
Ann Arbor, MI

P. William Curreri, M.D.
President
Strategem of Alabama, Inc.
Mobile, AL

Anne B. Jackson
Sarasota, FL

Donald Theodore Lewers, M.D.
Private Practice of Medicine
Easton, MD

Patricia M. Nazemetz
Director of Benefits
Xerox Corporation
Stamford, CT

Joseph P. Newhouse, Ph.D.
John D. MacArthur Professor of Health Policy and Management
Director, Division of Health Policy, Research, and Education
Harvard University
Boston, MA

Mark V. Pauly, Ph.D.
Professor of Health Care Systems, Public Policy and Management, Insurance and Risk Management, and Economics
The Wharton School
Director of Research and Senior Fellow
Leonard Davis Institute of Health Economics
University of Pennsylvania
Philadelphia, PA 19104

Earl P. Steinberg, M.D.
Vice President
Health Technology Associates
Co-Director
Outcomes Studies Group
Washington, DC

Ray E. Stowers, D.O.
Medford Family Clinic
Medford, OK

Roger S. Taylor, M.D., M.P.A.
Executive Vice President and Chief Medical Officer
PacifiCare Health Systems
Cypress, CA

[1] This report was approved by the Commission at its April 27, 1995 meeting. At that time, the Commission was chaired by John M. Eisenberg, M.D., and Robert Keller, M.D., and Uwe Reinhardt, Ph.D., were active members. On May 1, 1995, Gail R. Wilensky, Ph.D., was appointed chair and Mark V. Pauly, Ph.D., Ray E. Stowers, D.O., and Roger S. Taylor, M.D., were appointed as Commission members.

COMMISSION STAFF

Lauren B. LeRoy, Ph.D., Acting Executive Director

Principal Policy Analysts

David C. Colby, Ph.D.
John F. Hoadley, Ph.D.
Christopher Hogan, Ph.D.

Senior Analysts

Donald F. Cox, Ph.D.
Donna O. Farley, Ph.D.
Kevin Hayes, Ph.D.
Katie Merrell
Anne Schwartz
David W. Shapiro, M.D., J.D.
Sally Trude, Ph.D.

Analysts

Elizabeth Docteur, M.S.
Lori Gruber, M.S.

Junior Analysts

Christine M. Cushman, M.P.P.
Heather L. Gold, M.A.

Administrative Staff

Sheran Estes McManus
Annette Hennessey
Sarah C. Hespenheide
Ann Johnson
Joyce Malones

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EXECUTIVE SUMMARY

This report is the Commission's fifth annual assessment of access to care for Medicare beneficiaries. Under the Omnibus Budget Reconciliation Act of 1989, the Secretary of Health and Human Services is required to submit an annual report to the Congress concerning changes in beneficiaries' use of services and access to care. The Commission's mandate is to comment on the Secretary's report and to offer analysis and recommendations to the Congress in these areas. Because the Secretary's report is not yet available, the Commission has proceeded to submit its analyses and recommendations to the Congress. Once the Secretary's report is submitted to the Congress, the Commission will comment on it.

The Commission's overall conclusion is that access to care remains good for most beneficiaries. Some vulnerable groups of beneficiaries--including African Americans; the oldest old (beneficiaries over age 85); and those living in urban poverty areas, urban Health Professional Shortage Areas, and rural poverty areas--continue to experience access problems as they did prior to introduction of the fee schedule.

KEY POINTS

- Most beneficiaries are satisfied with their access to medical care and the quality of that care, though some vulnerable groups--such as African Americans, people with functional disabilities, and those without supplemental coverage--continue to have more difficulty than others in obtaining medical care and were less satisfied with its quality.

- Those access problems found appear to be greatest in the areas of preventive care as well as monitoring and followup of chronic conditions, particularly among vulnerable groups of beneficiaries.

- Beneficiary use of services generally did not drop between 1991 and 1994, despite decreases in payment rates for many services.

- While use of some services fell, the decreases are likely to be related to changes in factors such as coverage, medical practice, technology, or procedure coding, and not necessarily to changes in beneficiaries' ability to receive needed care.

- Measures of physician willingness to provide services to Medicare beneficiaries show no major shifts. The ratios of the physicians serving beneficiaries to the beneficiary population are not decreasing, nor are physicians' case loads of Medicare patients.

- Given the anticipated growth in Medicare managed care, the Commission has outlined a work plan for developing a strategy to monitor access of beneficiaries enrolled in Medicare health maintenance organizations.

The Commission reiterates the recommendation in its *Annual Report to Congress 1995* that multiple approaches should be considered to maintain and expand service delivery for underserved Medicare beneficiaries. These approaches cover a broad range of policies. Among them are ensuring appropriate numbers and distribution of health professionals to serve these beneficiaries; paying providers, including qualified nonphysician health professionals, who care for these beneficiaries; and making certain that these beneficiaries have access to new health care delivery systems.

INTRODUCTION

This report is the Commission's fifth annual assessment of access to care for Medicare beneficiaries. Under the Omnibus Budget Reconciliation Act of 1989, the Secretary of Health and Human Services is required to report to the Congress by April 15 of each year on changes in beneficiaries' use of services and access to care. It is the Commission's responsibility to comment on the Secretary's report and to offer analysis and recommendations to the Congress in these areas. Due to an indefinite delay in release of the Secretary's report, the Commission has proceeded to submit its analyses and recommendations to the Congress. Once the Secretary has submitted her report to the Congress, the Commission will comment on it.

The Commission's access monitoring responsibilities reflect the importance the Congress has placed on Medicare beneficiaries' access to care and the potential of physician payment reform to affect access. Payment reform includes 1) restructuring of payments across services, specialties, and localities to reflect resource costs; 2) constraining expenditure growth with Volume Performance Standards; and 3) enforcing limits on balance billing. Monitoring access helps the federal government ensure that an acceptable level of access to care is maintained while payment reform is implemented.

Access is defined as the ability to obtain needed medical care. A number of barriers to access have been discussed in the health care literature that may affect the ability of beneficiaries to obtain needed services (Aday and Andersen 1981; Institute of Medicine 1993). Some potential barriers are patient related and include such factors as education, income, culture, and language. Other barriers involve the structure and organization of the health care system and include the number and distribution of providers, financing of care, and the availability of transportation. While any of these barriers may influence beneficiary access, the particular focus of this report is changes in access related to implementation of the Medicare Fee Schedule.

Monitoring changes in use of needed services by beneficiaries is a challenge because of the difficulty in distinguishing needed from inappropriate services. Pointing to evidence of inappropriate care, the Commission and others, including the Congress, have called for a slowing in the rate of growth of service volume. Thus, when such a slowing does occur, the change must be analyzed to determine whether it should be applauded as having saved resources and benefitted patients by reducing inappropriate services or criticized as a reduction in access to needed services.

The importance of distinguishing between needed and inappropriate services has led the Commission to look only briefly at changes in aggregate service use and to devote most of its attention to subsets of services and vulnerable populations. For example, the Commission considers changes in use of primary care services to be a better indicator of access than changes in use of all services because of a belief that a lower proportion of the former is inappropriate. Study of individual services may yield even more precise indicators of access because of the ability to incorporate information on changes in technology, coding policies, and other factors likely to affect use. In this report, the Commission studied a number of individual services for which volume declined. In many cases, the decline in volume was explained

by changing technology. Another approach used to focus the Commission's monitoring effort was to examine indicators of lack of access, such as use of emergency rooms and hospital outpatient clinics.

Information from surveys of beneficiaries also permits attention to measures more detailed than aggregate service use. For example, the Medicare Current Beneficiary Survey (MCBS) asks about failure to see a physician when the respondent had a medical problem and having a regular source of care.

A focus on service use by vulnerable populations (e.g., those living in poverty areas and those aged 85 and over) is another part of this strategy. Since these populations tend to have less access to care than the general population, any relative decline in service use would be cause for concern. In addition, to the degree that these populations are more difficult for physicians to treat, they are at risk of being the first to suffer from any decline in physicians' willingness to treat Medicare patients.

Once good measures of use of needed services are developed, the impact of Medicare payment policies must be separated from other factors that may affect access. Since the restructuring of payment rates has a strong geographic component--payment rates increased in some geographic areas, but decreased in others--comparison of changes in use among areas affords an opportunity to separate the effect of payment rate changes from other factors. Where changes in use are similar in areas with payment rate increases and those with decreases, then implementation of the Medicare Fee Schedule is unlikely to be the cause.

In addition to monitoring use of services, the Commission measures changes in the degree of choice of provider. Measuring choice can serve as an early indicator of problems in obtaining access to needed services. This is because with an initial decline in choice, beneficiaries would likely, in most instances, be able to get the services they need after some additional searching for physicians. Thus, data on rates of service use would not reveal the developing problem. But if choice declined further, the increased difficulty of the search would start to affect use of services.

The Commission has analyzed data on choice of provider from both beneficiary and physician perspectives. Beneficiary data on difficulty in finding a physician provide a direct measure of choice. This can be obtained from surveys and tallies of complaints.

Data on physician willingness to serve Medicare beneficiaries can be obtained from both surveys of physicians and analyses of claims data compiled at the level of the individual physician. With survey data, physicians' willingness to accept new Medicare patients can be compared to their willingness to accept privately insured patients. Claims data can be analyzed to determine whether the bulk of service to Medicare beneficiaries is coming from a diminishing number of physicians.

THE COMMISSION'S PREVIOUS WORK ON ACCESS TO CARE

The first two reports on access to care prepared by the Commission described development and testing of access measures from administrative data and profiling Medicare beneficiaries' use of services prior to physician payment reform (PPRC 1991; PPRC 1992). Based on claims and enrollment data for

approximately 1.5 million beneficiaries for the period 1986 through 1990, these reports outlined an approach for monitoring access that includes three distinct steps 1) tracking trends in utilization, 2) attributing changes in utilization to the implementation of the fee schedule, and 3) interpreting those changes as changes in access to care.

The Commission's initial work on access had two purposes: one methodological and one oriented toward policy. From a methods standpoint, the baseline analysis demonstrated the feasibility and validity of a claims-based approach to monitoring access to care. A wide range of utilization indicators was developed from Part A and Part B claims; these included both process measures, such as use of particular services, and outcome measures, such as outlier hospital days, admission to the hospital from the emergency room, and mortality rates. Furthermore, analysis of data over a five-year period (1986 to 1990) showed that patterns of utilization were reasonably stable over time, indicating that these data could be used to detect changes in access associated with implementation of the fee schedule. Finally, control groups were constructed by taking advantage of variation in the change in payment rate levels across geographic areas that occurred with the payment reform. For a specific procedure, the change in utilization in areas with sharp payment rate reductions could be contrasted with the change in utilization in areas with only slight payment rate reductions or payment rate increases. If reduced payment rates affect use, the largest changes should occur in areas with substantial payment rate reductions. If reduced payment rates do not affect use, both types of areas should show similar changes in utilization based on existing trends, introduction of new technologies, and ongoing changes in the practice of medicine.

With respect to policy development, the Commission's initial access reports identified access problems that existed prior to introduction of the fee schedule. Analysis of claims data for the period between 1986 and 1990 indicated that certain vulnerable populations--African American beneficiaries as well as beneficiaries living in urban poverty areas and urban Health Professional Shortage Areas--showed evidence of inadequate access to care. Specifically, these individuals were less likely ever to see a physician during the year, used fewer preventive services, and were more likely to obtain primary care in emergency rooms and hospital outpatient departments. Moreover, their health outcomes were poor; they were more likely to have outlier hospital stays and had higher mortality rates (PPRC 1992).

Building on its earlier efforts to monitor access, the Commission issued reports on access in 1993 and 1994. For these reports, the Commission used Medicare claims data to compare beneficiary access before and after fee schedule implementation (PPRC 1993; PPRC 1994). Despite fears that changes in Medicare payment policies might limit access, the volume of services per beneficiary grew through early 1993, suggesting that access remained good for most beneficiaries. Disadvantaged populations who had trouble obtaining care before physician payment reform, however, continued to exhibit both lower utilization and worse health outcomes.

The 1993 and 1994 access reports also made use of information from the MCBS; a survey of physicians conducted by the Commission; and results of surveys of congressional offices, state agencies on aging, and organizations representing Medicare beneficiaries. The analysis of the MCBS confirmed conclusions based on earlier analyses of 1991 Medicare claims data that access was excellent for most beneficiaries, but that some subgroups faced access barriers.

Other, less formal, survey data on the level of beneficiary complaints about access were used in the 1993 and 1994 reports to provide qualitative information on beneficiary access problems. The surveys showed that access problems often center around primary care physicians and most often involve beneficiaries trying to find a new physician after moving or after their physician had moved or retired.

An overall finding of the Commission's previous work on access is that the health insurance provided under the Medicare program may not be sufficient to overcome the access barriers experienced by some vulnerable populations of beneficiaries. As recommended in the Commission's *Annual Report to Congress 1995*, multiple approaches should be considered to maintain and expand service delivery for underserved Medicare beneficiaries (PPRC 1995). These approaches include ensuring appropriate numbers and distribution of health professionals to serve these beneficiaries; paying providers, including qualified nonphysician health professionals, who care for these beneficiaries; and making certain that these beneficiaries have access to new health care delivery systems.

CHAPTER 1

BENEFICIARIES AND THE MEDICARE FEE SCHEDULE

Access to care appears to be good for most Medicare beneficiaries as the Medicare Fee Schedule nears full implementation. The Commission bases this conclusion on the following findings presented in this chapter:

- In surveys, beneficiaries report little trouble getting care.
- Surveys also show that most beneficiaries are satisfied with the care received.
- Medicare claims data show no systematic drop in use of services.
- Declines in service use that were found with claims data appear to be related to changes in medical practice, technology, coverage, or procedure coding.

These findings are general, based on analysis of information from all beneficiaries. While access remains good for most beneficiaries, subgroups of vulnerable beneficiaries, particularly African Americans and those living in urban poverty areas and urban Health Professional Shortage Areas, continue to experience the access problems that existed prior to reform. Access of these vulnerable groups is addressed in detail in the next chapter.

Despite the Commission's overall findings on access, anecdotes and reports of "hot spots" of access problems persist. Surveys of beneficiary complaints about access by the Commission suggest that these problems are likely to follow breaks in existing patient-physician relationships (PPRC 1994). As with any information of this type, it is not clear whether such problems have become worse since reform or if they are a continuation of problems that existed previously.

To gain a further understanding of access problems that may be specific to certain local areas, the Commission is working with two beneficiary service organizations on collection of data on "hot spots" of access problems. Results of these efforts are not yet available. The Commission will also continue its monitoring activities in order to detect any systematic access problems as early as possible.

ANALYSIS OF THE MEDICARE CURRENT BENEFICIARY SURVEY

The Medicare Current Beneficiary Survey (MCBS) is a valuable source of information on beneficiary access to care. This survey of some 12,000 beneficiaries is sponsored annually by the Health Care Financing Administration (HCFA) Office of the Actuary.[1]

The MCBS provides information on specific aspects of beneficiary access to care such as reasons for difficulty in finding a physician, whether care was delayed for financial reasons, availability of a usual source of care, and satisfaction with care. This important data source, therefore, provides useful contextual information that supports analyses of utilization patterns with data from other sources, such as Medicare claims.

Access to Care, Satisfaction, and Quality of Care

In the MCBS, beneficiaries were asked directly and indirectly about their access to care. Questions such as whether the respondent had ever had a medical problem but did not see a physician and whether the beneficiary had a particular physician or physician's office as his or her usual source of care are considered direct measures of access. In instances where beneficiaries had problems with access to care, reasons for these problems were elicited.

Patient satisfaction and perceptions about quality are considered indirect indicators of access. It is assumed that when barriers to care exist, beneficiaries will express dissatisfaction with the care provided. Indirect measures considered here include satisfaction with the availability of care on nights and weekends, beneficiaries' confidence in their physicians, and perceptions about the quality of care.

Analyses of the 1993 survey show that measures of access to care are essentially unchanged from 1991 and 1992, and that access for most beneficiaries remains excellent. Only 0.3 percent of beneficiaries reported having problems getting care because the physician would not accept Medicare patients. About 87 percent identified a physician's office as their usual source of care or, if they obtained care in another setting, saw a particular physician (Table 1-1). Among those without a usual source of care, most reported they were seldom or never sick. Furthermore, 97 percent reported no trouble getting care during the past year. Among those reporting trouble, cost and transportation were the most commonly cited problems.

Satisfaction with care also remained high. At least 93 percent had great confidence in their physician, and were satisfied with the availability of care at night and on weekends as well as with the ease of getting to a physician. Although satisfaction with out-of-pocket costs was lower than that with access and quality, it was still fairly high at 82 percent (Table 1-1).

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[1] Further details on the MCBS and the Commission's analysis of survey data are in the appendix.

Table 1-1. Medicare Beneficiaries Reporting Acceptable Access to Care, 1993 (percentage)

Access Question	Beneficiaries With Positive Response
Access To Care	
Usual source of care in office or with particular physician	87
No delayed care due to cost during past year	90
No trouble getting care during past year	97
Satisfaction With Care	
Satisfied with availability of care at night and on weekends	93
Satisfied with ease of getting to physician	94
Satisfied with out-of-pocket costs paid for medical care	82
Has great confidence in physician(s)	94

SOURCE: Physician Payment Review Commission analysis of the 1993 Medicare Current Beneficiary Survey data.

NOTE: This analysis excludes institutionalized beneficiaries.

ANALYSIS OF BENEFICIARY CLAIMS FILES

Medicare claims files are a large store of information on beneficiary use of services. They can be used to monitor changes in utilization patterns accompanying introduction of the Medicare Fee Schedule.

For this report, Medicare beneficiaries' service use during the first half of 1994 was compared with service use during the first six months of 1991.[2] Data consisted of all physicians' services claims for a 5 percent sample of beneficiaries.[3]

In its previous work with utilization data, the Commission has found that changes in use of services must be interpreted carefully when assessing the relationship between service use and access to care (PPRC 1994). Factors such as changes in technology, medical practice, or coverage of services often explain changes in service use that do not necessarily involve changes in access to care.

[2] The Commission is able to analyze 1994 claims for this report because of the National Claims History system developed by the Health Care Financing Administration (HCFA). Through a significant effort on the part of HCFA Bureau of Data Management and Strategy staff, the Commission now receives a sample of half-year claims data in the fall of the same year in which the claims were submitted.

[3] Further details on the claims data analysis appear in the appendix.

Aggregate Changes in Service Use between 1991 and 1994

Two measures of service use were calculated as part of the claims analysis. First, simple counts of services were tabulated. These counts do not reflect changes in the mix of services from, for example, less complicated to more complicated procedures. Second, an index of the total volume and intensity of care was created. To construct this index, counts of services are weighted in proportion to the payment rate for the service. For example, a $1,000 cataract surgery would be weighted as heavily as 10 consultations costing $100 each. This index captures changes in the count of services as well as changes in the mix, or intensity, of services.[4]

In most cases, the volume and intensity index measures change more accurately than counts of services. Visit services are an important exception, however. Analysis of the volume and intensity of visits relies on a potentially inaccurate crosswalk of 1991 visit codes to codes used after 1991. The count of visits, by contrast, does not rely as heavily on the crosswalk. Since the crosswalk captures an entire class of codes, a count of services should provide a good indicator of changes in use of services.[5] Changes in the intensity of visit services are not addressed by the simple counts, however.[6]

Overall beneficiary use of physician services climbed from 1991 through 1994. The volume and intensity per beneficiary of all services rose at an annual rate of 3.8 percent (Table 1-2).

Services with payment rate increases and those with decreases both were used more often (Table 1-2). Payment rates for evaluation and management services increased by 5.7 percent, while use of these services grew by 3.6 percent. For the two groups of services with payment rate decreases, surgical services and other nonsurgical services, went up by 3.1 percent and 4.4 percent, respectively.

The use of some specific services fell, however. Cataract lens replacement, mammography, routine diagnostic radiology, home visits, and transurethral prostate surgery all had decreases in use ranging from 2.2 percent to 10.1 percent. As discussed in the Commission's 1994 access report, these decreases appear to be related to changes in factors such as coverage, medical practice, technology, or procedure coding and not necessarily to changes in access to care (PPRC 1994).

The 3.8 percent growth rate in volume of all services for the three years ending in 1994 is lower than the trend seen before the Medicare Fee Schedule was introduced. The annual growth rate for the five years ending in 1991 was 7.1 percent (Board of Trustees 1994). Whether this relatively low growth in service volume represents a change in trend is unclear, however, because the rate has been quite volatile. In the

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[4] Volume and intensity growth is measured by asking how much outlays would have risen if prices had been frozen. This is computed directly from data on individual services, calculating the total cost of 1994 services at 1991 prices, then comparing this to actual 1991 outlays.

[5] For office visits, for example, the accuracy of the volume and intensity index depends on each old code being accurately mapped to a new code. By contrast, a count of services will provide a good measure of physician contacts so long as all office visits under the old system are recorded as office visits under the new system.

[6] The intensity of visit services coding increased between 1992 and 1994 (PPRC 1995).

10 years ending in 1991, for instance, annual growth rates ranged from 3.7 percent to 10.0 percent (Board of Trustees 1994). The 1991 to 1994 growth rate is the lowest multiyear rate since the 1984 to 1985 period, when it was 3.9 percent.

Table 1-2. Change in Payment and Use Per Beneficiary for Selected Services, 1991-1994

Type of Service	Annual Percentage Change: Payment Per Service	Annual Percentage Change: Volume and Intensity[a]	Annual Percentage Change: Count of Services[b]	Percentage of 1994 Physicians' Services Outlays
All Services	0.4	3.8	3.5	100.0
Evaluation and Management	5.7	3.6	2.5	33.7
Primary care	5.9	2.4	2.2	21.9
Office and other outpatient	4.9	2.7	2.3	15.9
Emergency department	9.7	3.9	5.2	2.3
Nursing facility/rest home	11.2	4.4	5.5	1.7
Home	10.3	-6.1	-4.4	0.2
Other evaluation and management	5.3	6.0	3.2	11.9
Surgical	-2.9	3.1	6.7	28.0
Cataract lens replacement	-5.0	-2.2	-2.3	3.5
Joint prosthesis	-3.8	8.1	7.3	1.4
Coronary artery bypass graft	-4.8	6.0	8.8	1.2
Transurethral prostate surgery	-3.1	-10.1	-9.9	0.4
Open prostate surgery	-1.8	1.1	-0.5	0.1
Arthroscopy	-4.2	10.4	9.1	0.2
Other Nonsurgical	-1.1	4.4	3.4	38.2
Routine diagnostic radiology	-2.8	-3.8	0.2	3.3
Echocardiograms	-2.6	16.0	19.3	2.2
CAT scans	-3.0	2.2	4.7	1.6
Colorectal endoscopy	-5.8	3.7	-1.8	1.5
Upper GI endoscopy	-7.1	3.9	2.4	1.1
Magnetic resonance imaging	0.9	8.6	11.9	1.0
Angioplasty	-9.0	16.2	17.1	0.6
Mammography	-1.0	-2.2	1.5	0.4

SOURCE: Physician Payment Review Commission analysis of 1991-1994 Medicare claims, 5 percent beneficiary file.

[a] Measures change in outlays if prices were frozen.

[b] Measures change in the number of services only.

NOTE: Data are for the first six months of each year.

To further analyze the relationship between payment rates and service use, changes in service use were analyzed by Medicare carrier area.[7] The analysis was intended to show whether areas that experienced the largest payment rate reductions, or smallest payment rate increases, were also those with the biggest decreases, or smallest increases, in service use. For each group of services (and for total services), carriers were divided into three groups based on the size of the change in average payment rate per service

[7] Carrier area boundaries typically correspond to state boundaries.

between 1991 and 1994. Carrier areas, categorized by magnitude of payment rate changes, were then contrasted in terms of growth in volume and intensity of services and counts of services per beneficiary.

The carrier area comparison does not support the notion that payment rate reductions have begun to limit access to care (Tables 1-3 and 1-4). In some cases (e.g., arthroscopy), growth in service use was highest in those areas experiencing the greatest payment rate cuts. In other categories of service, no relationship between payment rate changes and changes in service use was discernible (e.g., joint prosthesis).

Table 1-3. Average Annual Change in Service Volume Per Beneficiary in Areas with Small and Large Payment Changes for Selected Services, 1991-1994 (percentage)

Type of Service	Type of Payment Change: Largest Reduction or Smallest Increase	Mid-Range	Smallest Reduction or Largest Increase
All Services	6.0	3.0	3.0
Evaluation and Management	4.5	3.8	2.8
Primary care	4.0	2.4	1.4
Office and other outpatient	5.0	2.6	1.3
Emergency department	3.0	3.4	5.3
Nursing facility/rest home	8.8	2.4	2.8
Home	-8.1	-1.3	-9.9
Other evaluation and management	6.9	6.6	4.4
Surgical	5.5	2.2	1.8
Cataract lens replacement	-0.3	-1.6	-4.5
Joint prosthesis	6.4	4.2	14.4
Coronary artery bypass graft	8.2	5.1	4.5
Transurethral prostate surgery	-11.8	-13.1	-6.2
Open prostate surgery	2.9	-2.9	3.8
Arthroscopy	15.3	11.5	4.7
Other Nonsurgical	7.1	5.1	1.3
Routine diagnostic radiology	-3.2	-3.9	-4.3
Echocardiograms	14.3	14.9	19.0
CAT scans	2.1	1.8	2.5
Colorectal endoscopy	3.6	3.9	3.6
Upper GI endoscopy	4.5	4.4	3.0
Magnetic resonance imaging	9.1	7.7	8.8
Angioplasty	13.3	17.4	18.7
Mammography	-0.8	-2.4	-3.1

SOURCE: Physician Payment Review Commission analysis of 1991-1994 Medicare claims, 5 percent beneficiary file.

NOTES: Data are for the first six months of each year.
Payment changes and areas were calculated separately for each type of service.
Service volume measures change in outlays if prices were frozen (volume and intensity).

Table 1-4. Average Annual Change in Service Counts Per Beneficiary in Areas with Small and Large Payment Changes for Selected Services, 1991-1994 (percentage)

Type of Service	Type of Payment Change: Largest Reduction or Smallest Increase	Mid-Range	Smallest Reduction or Largest Increase
All Services	6.2	3.0	2.3
Evaluation and Management	3.0	2.7	2.0
Primary care	3.0	2.3	1.8
Office and other outpatient	3.4	2.3	1.6
Emergency department	3.4	5.1	6.4
Nursing facility/rest home	8.6	4.9	4.3
Home	-6.5	1.1	-8.3
Other evaluation and management	4.2	4.0	1.6
Surgical	13.5	3.6	3.9
Cataract lens replacement	-0.5	-1.6	-4.5
Joint prosthesis	5.4	3.8	12.7
Coronary artery bypass graft	10.7	7.8	7.8
Transurethral prostate surgery	-11.6	-12.9	-6.0
Open prostate surgery	1.8	-4.1	1.8
Arthroscopy	15.0	8.9	4.6
Other Nonsurgical	4.5	4.7	1.3
Routine diagnostic radiology	0.6	0.2	-0.1
Echocardiograms	18.4	17.7	22.5
CAT scans	5.0	3.9	5.0
Colorectal endoscopy	-2.2	-2.0	-1.4
Upper GI endoscopy	2.6	3.0	1.6
Magnetic resonance imaging	10.3	12.1	13.4
Angioplasty	12.6	18.6	19.8
Mammography	2.3	1.3	1.0

SOURCE: Physician Payment Review Commission analysis of 1991-1994 Medicare claims, 5 percent beneficiary file.

NOTES: Data are for the first six months of each year.
Payment changes and areas were calculated separately for each type of service.
Service counts measures growth in the number of services only.

Changes in the Proportion of Beneficiaries Using Services

The changes in service use described above, measured in terms of service use per beneficiary, are composed of two elements. First is change in the proportion of beneficiaries using services. Second is the amount of service use among those who use services, or use per user. This distinction is important in interpreting changes because service use, among those using services, could be increasing while the proportion of beneficiaries using services is going down.[8]

[8] As in the previous section, use of services is measured with a volume and intensity index. Beneficiaries enrolled in Part B fee-for-service are counted with Medicare enrollment files. User counts are numbers of unique beneficiaries using services. Beneficiaries are counted with unique identifiers included in Medicare claims files.

Considering all services, the proportion of beneficiaries entering the health care system and using any physician service increased between 1991 and 1994 (Table 1-5). The proportion of beneficiaries with any use grew at an average annual rate of 1.1 percent between 1991 and 1994. In 1994, the proportion of beneficiaries using physician services was 0.84.

Table 1-5. Decomposition of Volume Per Beneficiary for Selected Services, 1991-1994

Type of Service	Average Annual Percentage Change: Volume and Intensity Per Beneficiary*	Volume and Intensity Per User	Proportion of Beneficiaries With Any Use	Proportion of Beneficiaries With Any Use in1994
All Services	3.8	2.7	1.1	0.84
Primary Care	2.4	1.1	1.3	0.77
Office and other outpatient	2.7	1.4	1.3	0.71
Emergency department	3.9	-1.4	5.4	0.14
Nursing facility/rest home	4.4	1.9	2.4	0.06
Home	-6.1	-2.9	-3.3	0.01
Other Evaluation and Management	6.0	0.0	6.0	0.20
Surgical	3.1	0.5	2.6	0.25
Cataract lens replacement	-2.2	-0.5	-1.7	0.02
Joint prosthesis	8.1	0.1	7.9	<0.01
Coronary artery bypass graft	6.0	-0.7	6.8	<0.01
Transurethral prostate surgery	-10.1	-0.3	-9.9	<0.01
Open prostate surgery	1.1	1.2	-0.1	<0.01
Arthroscopy	10.4	-1.8	12.4	<0.01
Other Nonsurgical	4.4	3.3	1.1	0.72
Routine diagnostic radiology	-3.8	-4.7	1.0	0.34
Echocardiograms	16.0	6.8	8.6	0.05
CAT scans	2.2	-1.0	3.2	0.07
Colorectal endoscopy	3.7	4.6	-0.9	0.03
Upper GI, endoscopy	3.9	1.1	2.8	0.02
Magnetic resonance imaging	8.6	-4.5	13.7	0.02
Angioplasty	16.2	0.2	16.1	<0.01
Mammography	-2.2	-4.3	2.2	0.06

SOURCE: Physician Payment Review Commission analysis of 1991-1994 Medicare claims, 5 percent beneficiary file.

* Measures change in outlays if prices were frozen.

NOTE: Data are for the first six months of each year.

Overall, growth in volume and intensity of services was influenced more by growth in volume and intensity per user than by growth in the proportion of beneficiaries using services (Table 1-5). The average annual growth in volume and intensity of all services per user of 2.7 percent was greater than the 1.1 percent increase in the proportion of beneficiaries using any service.

Among services with decreases in volume and intensity per beneficiary, the decreases often included a decrease in the proportion of beneficiaries using those services (Table 1-5). The cataract lens replacement and transurethral prostate surgery decreases, for example, were made up primarily of decreases in the proportion of beneficiaries using the services. This result is not surprising. Given the limited number of these procedures used by each beneficiary, substantial change in volume per user is not likely. As discussed earlier, change in use of cataract lens replacements and transurethral prostate surgery appears to be related to changes in technology and treatment patterns and not to the effects of Medicare payment policy.

Other services with decreases in volume and intensity per beneficiary experienced decreases in volume and intensity per user but not decreases in the proportion of beneficiaries using the services (Table 1-5). Routine diagnostic radiology and mammography saw decreases in volume and intensity per user of 4.7 percent and 4.3 percent, respectively. The proportions of beneficiaries using these services grew. For routine diagnostic radiology, the proportion grew by 1.0 percent, and the proportion using mammography grew by 2.2 percent. The decreases in volume and intensity per user of these services appear to be related to the changes in coverage and procedure coding noted earlier.

One type of service, colorectal endoscopy, experienced an increase in volume and intensity per beneficiary but a decrease in the proportion of beneficiaries using services (Table 1-5). Volume and intensity per beneficiary increased by 3.7 percent, but the proportion of beneficiaries using these services decreased by 0.9 percent. Further study of the claims data shows that the increase in volume and intensity per beneficiary was influenced by greater of use of colonoscopies, which are more costly than other colorectal endoscopies.[9] The decrease in the proportion of beneficiaries using these services was influenced by lower use of sigmoidoscopies which was not offset by the greater use of colonoscopies.[10]

The Agency for Health Care Policy and Research is planning to develop practice guidelines for colorectal endoscopy and other services used to screen for and diagnose colorectal cancer. These guidelines may be useful in efforts to identify needed colorectal services.[11] In the interim, the Commission will continue to monitor use of these services.

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[9] In 1994, the average Part B allowed charges for colorectal endoscopy services were: rigid sigmoidoscopy, $48; flexible sigmoidoscopy, $87; and colonoscopy, $356.

[10] The proportion of beneficiaries using other colorectal services also decreased. Between 1991 and 1994, the proportion of beneficiaries using fecal occult blood tests decreased from 0.061 to 0.058, an average annual decrease of 1.7 percent. Over the same period, the proportion of beneficiaries receiving barium enema radiological examinations decreased from 0.018 to 0.014, an average annual decrease of 8.0 percent.

[11] Release of the guidelines may also lead to changes in use of these services.

CHAPTER 2

ACCESS OF VULNERABLE POPULATIONS OF BENEFICIARIES

The overall finding, based on data from all beneficiaries, of good access for most beneficiaries is encouraging. But, the Commission has also found that some vulnerable beneficiaries continue to experience the access problems they had prior to introduction of the fee schedule. In particular,

- Survey data show that these vulnerable beneficiaries have more difficulty than others obtaining medical care. They are also less satisfied with the quality of care received.

- No relationship was found between changes in vulnerable beneficiaries' use of services and changes in payment rates accompanying introduction of the fee schedule.

- Analysis of claims data with clinical indicators of access, which consider beneficiary diagnoses, suggest that monitoring and followup of chronic conditions is a main source of access problems among vulnerable beneficiaries.

- Lack of monitoring and followup could explain the greater use of emergency rooms by some groups of beneficiaries.

These findings are consistent with those presented in earlier Commission access reports (PPRC 1993; PPRC 1994). Those reports have shown that vulnerable groups of beneficiaries--particularly African American beneficiaries and those living in urban poverty areas, urban Health Professional Shortage Areas, and rural poverty areas--use physicians' services less than other beneficiaries and appear to have poorer health outcomes. The access problems of these beneficiaries appear to be access problems that existed prior to introduction of the Medicare Fee Schedule.

ANALYSIS OF THE MEDICARE CURRENT BENEFICIARY SURVEY

The Medicare Current Beneficiary Survey (MCBS), a longitudinal survey of 12,000 Medicare beneficiaries, is described in the previous chapter. The survey includes collection of information on beneficiary characteristics, such as ethnicity and health status, not collected with Medicare claims.[1] This information has been used to identify additional subgroups of beneficiaries--Hispanics, those without supplemental insurance, and those with functional disabilities--that may be vulnerable to access problems.

[1] HCFA's release of MCBS results combines survey data and Medicare claims data for survey participants.

Access to Care, Satisfaction, and Quality of Care

Analyses of the 1993 survey show results comparable to those for 1991 and 1992: access to care for most beneficiaries continues to be excellent. As noted in the previous chapter, in 1993, 87 percent identified a physician's office as their usual source of care or, if they obtained care in another setting, saw a particular physician (Table 2-1). About 10 percent had a problem they thought warranted medical attention but did not see a physician. Only 3 percent had trouble getting care during the past year (Table 2-1).

Table 2-1. Medicare Beneficiaries Reporting Problems with Access, 1993 (percentage)

Population Group	Had Trouble Getting Care	Had Problem, but Did Not See a Physician	Delayed Care Due to Cost	No Usual Source of Care[a]
All Beneficiaries	3	10	10	13
Race				
African American	6	13	15	19
White	3	9	10	12
Other	3	8	12	24
Ethnicity				
Hispanic	6	[b]	16	26
Other	3	[b]	10	12
Functional Disability				
Help needed	8	16	17	10
No help needed	3	9	9	14
Age				
≥85	2	7	5	9
<85	4	10	11	14
Low Income				
Yes	6	[b]	17	21
No	3	[b]	10	13
No Supplemental Insurance				
Yes	8	18	24	29
No	3	9	8	11

SOURCE: Physician Payment Review Commission analysis of 1993 Medicare Current Beneficiary Survey.

[a] Defined as identifying a physician's office or a particular physician as a usual source of care.

[b] No statistically significant difference between population groups at the 5 percent level.

NOTE: This analysis excludes institutionalized beneficiaries.

Although Medicare beneficiaries reported about the same levels of access in 1993 as in the previous two years, some beneficiaries continued to have more difficulty than others in obtaining medical care (Table 2-1). For example, Hispanic beneficiaries, those with low incomes, and those with no supplemental

insurance were less likely to have a usual source of care. African Americans, those with functional disabilities requiring help, and those with no supplemental insurance were more likely to have a health problem but fail to see a physician. All of the vulnerable groups were more likely to delay care due to cost.

Distinctions among groups were also found in their satisfaction and ratings of quality of care (Table 2-2). Compared with their counterparts, African Americans, Hispanics, people with functional disabilities, people over the age of 85 years, and those without supplemental coverage were less satisfied with the overall quality of their care. Similarly, fewer African Americans and those without supplemental coverage agreed strongly with statements that their physician checks everything or that they had great confidence in their physician.[2]

Table 2-2. Medicare Beneficiaries' Attitudes Toward the Care They Receive, 1993 (percentage)

Population Group	Strongly Agrees with "Physician Checks Everything"	Strongly Agrees with "Great Confidence in Physician"	Very Satisfied with Availability of Medical Care	Very Satisfied with Overall Quality of Care
All Beneficiaries	26	27	22	35
Race				
African American	21	22	16	24
White	27	28	24	37
Other	23	28	23	23
Ethnicity				
Hispanic	*	*	*	28
Other	*	*	*	35
Functional Disability				
Help needed	*	*	19	28
No help needed	*	*	23	36
Age				
≥85	23	*	19	30
<85	26	*	23	35
Low Income				
Yes	18	*	*	*
No	26	*	*	*
No Supplemental Insurance				
Yes	22	23	17	25
No	27	28	23	36

SOURCE: Physician Payment Review Commission analysis of 1993 Medicare Current Beneficiary Survey.

* No statistically significant difference between population groups at the 5 percent level.

NOTE: This analysis excludes institutionalized beneficiaries.

[2] For quality and satisfaction questions, the MCBS uses a four-point scale for responses: strongly agree, agree, disagree, strongly disagree, and very satisfied, satisfied, unsatisfied, and very unsatisfied, respectively.

Changes in Utilization

Prior to its implementation, there were two widely held expectations of the potential impact of the Medicare Fee Schedule on utilization and access to care. Many expected that under the Medicare Fee Schedule, increasing fees would encourage the provision of more services. There were also concerns that fee reductions might threaten the generally good access enjoyed by Medicare beneficiaries.

In general, Medicare beneficiaries had the same or increased utilization of services after implementation of the Medicare Fee Schedule. The Commission suggested, however, that if there were threats to access, these would occur first for vulnerable populations, such as the poor and disabled. At first, most concerns focused on these populations in areas where Medicare fees decreased. In fact, the Medicare Fee Schedule initially resulted in fee decreases offset by increases in services, and fee increases associated with reductions in services (PPRC 1993). Changes in utilization for vulnerable populations reflected these patterns. By the second year of implementation, however, these patterns were no longer found either for the population as a whole or for any of the vulnerable population groups.

To further assess access of vulnerable populations for this report, changes in access were measured by changes in utilization for each beneficiary from 1992 to 1993. For each beneficiary, total utilization was calculated by multiplying the frequency of each service times its national average payment and summing across all claims for the year. Change in utilization was measured separately for all services, evaluation and management services (visits and consultations), and surgical services.

In order to analyze the impact of the fee schedule on vulnerable populations, beneficiaries are categorized according to whether their area experienced average increases or decreases in Medicare payment rates of 2 percent or more.[3] For example, an area with an average Medicare fee increase of 5 percent is categorized as a fee increase area, while an area with an increase of 1 percent is considered an area of no change. Change in utilization is measured controlling for those factors thought to affect the need for care: age, sex, and change in health status. To measure change in self-reported health status, comparisons were made between responses for 1992 and 1993 and changes were categorized as the same, improved, or poorer health status.[4]

The analysis shows that, in the second year of the Medicare Fee Schedule, all beneficiaries, on average, had increased utilization for all services except surgical services (Table 2-3). For all services, beneficiaries had an average gain of $71, while evaluation and management services increased $14 and surgical services decreased $1. The functionally disabled requiring help with activities of daily living and people over 85 years of age saw reductions in utilization of all services, on average.

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[3] For these analyses, an area is defined as a carrier locality.

[4] The model for these analyses used sex, age, and indicators for those with improved health status and poorer health status. In addition, beneficiaries were categorized according to whether they belong to a vulnerable group and whether they live in an area that experienced Medicare fee increases or decreases.

Table 2-3. Average Change in Utilization by Population Group, 1992-1993 (dollars)

Population Group	All Services	Evaluation and Management Services	Surgical Services
All Beneficiaries	71	14	-1
Vulnerable Group	22	8	-19
African American	181	9	34
Hispanic	69	8	17
Functional disability, needs help	-134	6	-77
85 and older	-53	4	-34
Low income	36	4	-1
No supplemental insurance	30	7	11

SOURCE: Physician Payment Review Commission analysis of 1992 and 1993 Medicare Current Beneficiary Survey data.

To understand the impact of the Medicare fee changes on vulnerable groups, analyses compare utilization of vulnerable groups in areas with fee changes to those without change. As mentioned earlier, changes in utilization controlled for the age, sex, and change in health status of the beneficiary. Since members of vulnerable groups in areas of change are compared to their counterparts in areas of no change, the effect on utilization from change in Medicare payment policy is isolated from the effect of belonging to a vulnerable group.

Although total utilization increased across all Medicare beneficiaries on average, beneficiaries in areas with a Medicare fee decrease did not have the same gains in utilization as beneficiaries in areas where fees increased or stayed the same. On average, beneficiaries in Medicare fee decrease areas had only a $2 increase in services, while those in areas of no change gained $104 (Table 2-4). This pattern in total utilization did not occur for the vulnerable groups, however. In addition, no statistically significant reductions in visits and surgical services were found for these groups (Table 2-5 and 2-6). One exception was that, on average, the functionally disabled in areas where fees for visits decreased had a $36 reduction in visits, while their counterparts in areas where fees for visits stayed the same had increases of $22. It is unclear, however, that this demonstrates diminished access to unneeded services. In areas where visit fees decreased, the functionally disabled received 10 visits per year on average instead of 11 visits. On the other hand, the functionally disabled in other areas average about 8 to 9 visits per year.

Table 2-4. Estimated Change in Total Utilization by Population Group and Areas of Medicare Fee Change, 1992-1993 (dollars)

Population Group	Average Utilization in 1992	Estimated Change in Utilization: Areas with No Medicare Fee Change	Areas with Medicare Fee Increases	Areas with Medicare Fee Decreases
All Beneficiaries	1,001	104	128	2*
Vulnerable Group	1,033	10	94	4
African American	839	214	37	220
Hispanic	1,106	62	471	19
Functional disability, needs help	1,494	-87	171*	-291
85 and older	1,144	-38	-54	-97
Low income	963	-4	-7	62
No supplemental insurance	603	-22	36	70

SOURCE: Physician Payment Review Commission analysis of 1992 and 1993 Medicare Current Beneficiary Survey data.

* Statistically significant difference from those in same population group in areas with no fee change at the 5 percent level.

NOTES: Utilization was measured by multiplying the frequency of each service times its national average payment and summing across all claims for the year.

Some groups show differences in utilization that appear large, but the differences are not statistically significant because there are too few beneficiaries in the groups.

Table 2-5. Estimated Change in Utilization of Visits by Population Group and Areas of Medicare Fee Change, 1992-1993 (dollars)

Population Group	Average Utilization of Visits in 1992	Estimated Change in Utilization: Areas with No Medicare Fee Change	Areas with Medicare Fee Increases	Areas with Medicare Fee Decreases
All Beneficiaries	198	15	15	9
Vulnerable Group	220	12	10	0
African American	193	8	10	12
Hispanic	241	13	19	-7
Functional disability, needs help	300	22	17	-36*
85 and older	260	14	3	-7
Low income	222	12	3	4
No supplemental insurance	125	14	5	-12

SOURCE: Physician Payment Review Commission analysis of 1992 and 1993 Medicare Current Beneficiary Survey data.

* Statistically significant difference from those in same population group in areas with no fee change at the 5 percent level.

NOTES: Utilization was measured by multiplying the frequency of each service times its national average payment and summing across all claims for the year.

Some groups show differences in utilization that appear large, but the differences are not statistically significant because there are too few beneficiaries in the groups.

Table 2-6. Estimated Change in Utilization of Surgery by Population Group and Areas of Medicare Fee Change, 1992-1993 (dollars)

Population Group	Average Utilization of Surgery in 1992	Estimated Change in Utilization: Areas with No Medicare Fee Change	Areas with Medicare Fee Increases	Areas with Medicare Fee Decreases
All Beneficiaries	237	14	-12	-21*
Vulnerable Group	238	-23	5	-27
African American	146	42	6	32
Hispanic	227	23	-95	19
Functional disability, needs help	353	-56	-28	-117
85 and older	286	-6	-53	-37
Low income	192	-22	-9	3
No supplemental insurance	131	-18	77	11

SOURCE: Physician Payment Review Commission analysis of 1992 and 1993 Medicare Current Beneficiary Survey data.

* Statistically significant difference from those in same population group in areas with no fee change at the 5 percent level.

NOTES: Utilization was measured by multiplying the frequency of each service times its national average payment and summing across all claims for the year.

Some groups show differences in utilization that appear large, but the differences are not statistically significant because there are too few beneficiaries in the groups.

CLINICALLY BASED INDICATORS: NECESSARY CARE AND AVOIDABLE OUTCOMES

The Commission has long held that access monitoring efforts should focus on needed care, not the total quantity of care. This section of the report outlines a research effort that moves closer to that goal, focusing on services considered necessary for the treatment of selected chronic and acute conditions.

Prior Commission reports identified a few broad categories of service that might reflect needed care or poor patterns of access. Primary care and preventive services were judged desirable, as was followup after hospitalization. Use of emergency departments, emergency hospital admissions, and excess mortality rates were potential indicators of poor access to care.

This approach provided some information about access but could clearly be improved. First, the link between access to care and use of these broad categories of service is not very specific. Different patterns of use could reflect variations in clinical needs or other factors as well as differences in access to care. Furthermore, most services could not be analyzed in this way. Each instance where the Commission documented decline in service use, a detailed review, unique to the service, was required to identify the reason for the decline.[5]

[5] Typically, declining use was due either to changes in Medicare benefits or to system-wide changes in the practice of medicine (PPRC 1994).

This year the Commission funded a project with the RAND Corporation to develop indicators of access and quality based on clinical criteria.[6] The RAND research team set out to identify services or patterns of delivery that represented necessary care (defined below). Indicators were tailored to particular chronic or acute medical conditions. RAND also identified, where possible, poor outcomes that could have been avoided through proper care. Commission staff used Medicare claims data to identify beneficiaries who did and did not get these necessary services or avoidable poor outcomes.

This is a new and complex approach and the results should be interpreted with caution. First, the analysis relies heavily on expert physician opinion. There remains some scope for disagreement about the necessity of the services studied. Second, claims data sometimes may not capture sufficient detail to allow accurate calculation. Thus, the use rates measured through the claims data may misstate and overstate the true level of problems. Finally, the research looks only at the bottom line: did beneficiaries get needed care. It does not address why care was not provided. Many factors other than access to care--for example, substandard quality of care, uncertainty about best clinical practices, and lack of patient compliance--may contribute to gaps in service delivery.

The most basic finding of this analysis is that Medicare beneficiaries often do not get care that a panel of physician experts considered to be a minimal quality standard. This finding is not particularly surprising, however. Numerous studies of the under-65 population have shown that patients often do not receive the level or pattern of care that physicians recommend.

The results of this analysis also confirm prior Commission conclusions regarding access problems for vulnerable populations within the Medicare program. Many vulnerable populations were significantly less likely to get necessary services. These same groups often had significantly higher rates of the related avoidable poor outcomes. For example, diabetic African-Americans were less likely to receive routine monitoring and followup for diabetes and were more likely to be admitted to the hospital for diabetic coma.

A third broad conclusion is that problems are greatest in the areas of preventive care, followup, and long-term monitoring of chronic conditions. With a few notable exceptions, Medicare beneficiaries get much more uniform treatment for health care crises than for chronic conditions.

The next section briefly outlines the methods used in this analysis. Results are then presented in the following section.

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[6] This was a collaborative project involving the Commission and RAND staff. Steven Asch, M.D., was the project director at RAND.

Methods

The approach adopted for this project differs considerably from traditional measures of access to care, such as change in use of services. The goal was to use clinical judgment to identify care that was necessary, then to see whether or not beneficiaries got that necessary care.

This method inherently captures many factors other than access, including quality of care and patient compliance with prescribed treatment paths. Beneficiaries could fail to receive needed care due to traditional access barriers, due to care that did not meet current quality standards, or because the beneficiary failed to follow the physician's or hospital's instructions.

The development of the indicators was a major effort at achieving agreement on necessary treatment for certain diseases. RAND first reviewed the literature to identify potential access indicators for the elderly. Many indicators of access to care found in the literature--for example, childhood immunization rates-- are not appropriate for the elderly population. Priority was given to conditions that were prevalent in the Medicare population, were identifiable from diagnoses coded on claims data, and that were amenable to treatment. In all, 17 different diseases or conditions were considered, covering a broad range of chronic and acute conditions.

Typically, an access indicator was a service that individuals with a given disease or condition should get. For example, beneficiaries with diabetes should get an annual eye exam. In some instances, avoidable poor outcomes were also identified, for example, admission to the hospital for diabetic coma. The access indicators capture different phases of health care delivery, including preventive care, initial evaluation, diagnostic services, treatment, followup, and avoidable outcomes. In total, nearly 150 different potential indicators were identified for these conditions.

Services were chosen to capture a minimum quality standard, and do not represent a "gold standard" or technically optimal care. Services were included only where a panel of physician experts agreed that those services represented necessary care--where it would be improper care not to recommend the service. This is a much more stringent standard than asking only whether the service was likely to be beneficial.

A panel of physician experts was convened twice to rate these indicators, to modify them, and to suggest new indicators. Indicators that the expert panel judged to be unsuitable were eliminated. Indicators were judged unsuitable either based on medical reasoning, or for technical reasons related to the coding and availability of information on claims data. Only 47 indicators that the panel rated highly in terms of overall quality were retained for the final analysis.

Commission staff used Medicare claims data to identify beneficiaries with each relevant disease or condition studied by the RAND team. Diagnosis information coded on physician and hospital inpatient

and outpatient bills was used to identify beneficiaries with specific conditions. Because the indicators rely on the information coded on bills, this approach will necessarily skip over beneficiaries who never saw a physician during the period studied (1992 and 1993). Similarly, indicators could not be calculated for beneficiaries while they were enrolled in health maintenance organizations (HMOs), because no claims data were available during HMO enrollment.

A 1 percent sample of elderly Medicare beneficiaries was used for the analysis.[7] Disabled beneficiaries were excluded because the indicators were targeted toward the elderly. Individuals who had any Part B fee-for-service enrollment during 1992 or 1993 were potentially eligible for calculation of the indicators. Overall, roughly 340,000 beneficiaries were included. All data are age-sex adjusted where possible.[8]

Results

Table 2-7 gives the results of this analysis. The columns contrast various vulnerable populations. For each indicator, the top row shows the percentage of beneficiaries who obtained the service, and the bottom row shows the number of beneficiaries who were candidates for the service, typically, those who had a disease or received a specified treatment for a disease. Taking the first indicator as an example, 2,487 beneficiaries were discharged from the hospital following a myocardial infarction (MI). Of these, 84.2 percent (.842) had a follow-up visit with a physician within four weeks of discharge.[9]

Two markers on the table are intended to flag significant differences in service use by vulnerable populations. An asterisk (*) marks instances where the difference between the vulnerable population and the remainder of the beneficiary population is statistically significant at the 5 percent level, meaning that a difference this large would occur solely by chance no more than five percent of the time. A pound symbol (#) marks instances where the difference across populations is 10 percent or more and is statistically significant.

The discussion below focuses only on the large and statistically significant differences flagged with a pound symbol on the table. Populations are discussed in the order that they appear on the table. While a standard statistical approach was used to screen out differences that are likely to be due solely to chance variation, in some instances the number of beneficiaries involved is still quite small for some of the rarer conditions or indicators.

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[7] The 1 percent sample was chosen for convenience. Calculating the access indicators requires significant amounts of computer time.

[8] The age-sex adjustment has no effect on the rates for categories that themselves define the age-sex categories, such as men versus women or beneficiaries over age 75 versus those under age 75.

[9] For the indicators that look at followup after hospitalization, beneficiaries discharged to other facilities or to home health agencies are excluded.

Table 2-7. **Clinically-Based Indicators of Access to Care for the Elderly** (proportion of patients receiving care and number of patients with disease or condition)

		All	African American	White	Male	Female	Age ≤75	Age >75	Rural	Urban	HPSA	Not HPSA	Poverty Area	Not Poverty Area
Heart and Circulatory System														
(1)	Visit within 4 weeks following discharge of patients hospitalized for MI	0.842 2487	0.788 160	0.846 2271	0.830 1356	0.858 1131	0.812 * 1235	0.872 1252	0.835 722	0.845 1730	0.828 500	0.846 1952	0.801 124	0.844 2325
(2)	Cholesterol test once every 6 months for patients hospitalized for MI who have hyper-cholesterolemia	0.780 533	0.821 20	0.777 502	0.804 285	0.754 248	0.788 307	0.770 226	0.791 160	0.773 365	0.808 96	0.769 429	0.860 22	0.776 502
(3)	EKG during ER visit for unstable angina	0.815 3292	0.794 235	0.818 2982	0.804 1442	0.824 1850	0.822 1607	0.809 1685	0.790 * 860	0.822 2373	0.781 * 637	0.824 2596	0.754 116	0.816 3115
(4)	Visit within 4 weeks following discharge of patients hospitalized for unstable angina	0.803 3426	0.747 * 238	0.807 3117	0.790 1585	0.815 1841	0.792 1765	0.816 1661	0.781 990	0.811 2341	0.776 695	0.809 2636	0.791 155	0.803 3169
(5)	Visit every 6 months for for patients with stable angina	0.957 21431	0.953 1416	0.957 19489	0.949 * 9081	0.963 12350	0.951 * 10175	0.962 11256	0.950 * 5713	0.959 15116	0.947 * 4106	0.959 16723	0.945 952	0.957 19856
(6)	Followup visit or hospitalization within one week of initial diagnosis of unstable angina	0.868 2930	0.851 195	0.869 2683	0.868 1326	0.868 1604	0.872 1546	0.863 1384	0.873 689	0.867 2183	0.874 561	0.866 2311	0.896 113	0.866 2755
(7)	Lipid profile in the first year after initial diagnosis of angina	0.512 8066	0.461 # 570	0.516 7317	0.500 3474	0.521 4592	0.522 4030	0.502 4036	0.482 * 2146	0.522 5685	0.507 1579	0.512 6252	0.506 350	0.511 7472
(8)	Among patients with known angina: 3 or more ER visits for cardiovascular-related diagnoses in one year	0.034 33659	0.048 # 2308	0.034 30303	0.032 # 14570	0.036 19089	0.031 # 16139	0.037 17520	0.037 8739	0.033 24048	0.036 6578	0.034 26209	0.040 1521	0.034 31233

Table 2-7. Clinically-Based Indicators of Access to Care for the Elderly (proportion of patients receiving care and number of patients with disease or condition) -- continued

		All	African American		White	Male		Female	Age ≤75		Age >75	Rural		Urban	HPSA		Not HPSA	Poverty Area		Not Poverty Area
(9)	Chest x-ray within 3 months of initial diagnosis of CHF	0.704 15899	0.660 1391	*	0.709 14140	0.736 6464	*	0.682 9435	0.710 5839		0.700 10060	0.700 4630		0.706 10987	0.695 3258		0.707 12359	0.669 848	*	0.706 14756
(10)	Visit within 4 weeks following discharge of patients hospitalized for CHF	0.845 5223	0.765 564	#	0.855 4522	0.849 2389		0.841 2834	0.851 2069		0.841 3154	0.850 1486		0.843 3631	0.837 1120		0.847 3997	0.802 319		0.848 4794
(11)	Visit every 6 months for patients with CHF	0.955 33825	0.942 3114	*	0.957 29912	0.951 13141	*	0.958 20684	0.954 11220		0.956 22605	0.942 10053	*	0.961 23177	0.946 7056	*	0.958 26174	0.942 1872	*	0.956 31333
(12)	EKG within 3 months of initial diagnosis of CHF	0.385 15899	0.365 1391		0.388 14140	0.415 6464	#	0.365 9435	0.431 5839	#	0.358 10060	0.353 4630	#	0.398 10987	0.378 3258		0.386 12359	0.356 848		0.386 14756
(13)	Nonelective admission for congestive heart failure	0.026 340509	0.032 26579	#	0.025 300369	0.028 137491	#	0.024 203018	0.016 187866	#	0.038 152643	0.026 88630		0.026 242180	0.027 64878	*	0.026 265932	0.030 15959	#	0.026 314591
(14)	Visit within 4 weeks following discharge of patients hospitalized with malignant or otherwise severe hypertension	0.825 275	0.702 44		0.843 223	0.768 95		0.856 180	0.814 156		0.840 119	0.815 102		0.838 168	0.746 61		0.852 209	0.555 20	#	0.841 249
Stroke																				
(15)	EKG within 2 days of initial diagnosis of TIA	0.360 4819	0.366 325		0.359 4388	0.372 1911		0.352 2908	0.360 1974		0.360 2845	0.314 1380	#	0.377 3364	0.335 991		0.365 3753	0.360 211		0.358 4530
(16)	For TIA patients with eventual carotid endarterectomy: interval between carotid imaging and carotid endarterectomy less than 2 months	0.627 536	0.698 16		0.626 515	0.659 296		0.588 240	0.624 290		0.630 246	0.574 143		0.645 387	0.601 92		0.634 438	0.610 15		0.622 515
(17)	Visit within 4 weeks following discharge of patients hospitalized for TIA	0.796 1410	0.708 123	#	0.806 1263	0.816 586		0.783 824	0.826 582	*	0.775 828	0.759 416	*	0.814 965	0.771 286		0.801 1095	0.681 74	#	0.802 1303

Table 2-7. **Clinically-Based Indicators of Access to Care for the Elderly** (proportion of patients receiving care and number of patients with disease or condition) -- continued

		All	African American	White	Male	Female	Age ≤75	Age >75	Rural	Urban	HPSA	Not HPSA	Poverty Area	Not Poverty Area
(18)	Visit every year for patients with diagnosis of TIA	0.982 6595	0.974 423	0.983 6042	0.978 2596	0.984 3999	0.977 * 2518	0.985 4077	0.977 1842	0.984 4638	0.977 1264	0.983 5216	0.954 * 266	0.983 6209
(19)	For patients hospitalized for carotid territory stroke: carotid imaging within 2 weeks of initial diagnosis	0.697 1032	0.760 32	0.694 981	0.678 569	0.719 463	0.679 563	0.719 469	0.685 287	0.704 734	0.716 184	0.697 837	0.841 # 30	0.696 990
(20)	For CVA patients with eventual carotid endarterectomy: interval between carotid imaging and carotid endarterectomy less than 2 months	0.563 1095	0.661 41	0.558 1041	0.568 602	0.556 493	0.562 623	0.564 472	0.546 308	0.571 769	0.565 214	0.565 863	0.633 36	0.562 1041
(21)	Visit within 4 weeks following discharge of patients hospitalized for CVA	0.740 3040	0.693 269	0.745 2706	0.737 1492	0.744 1548	0.736 1458	0.745 1582	0.718 897	0.746 2084	0.713 603	0.744 2378	0.712 163	0.740 2815
Pulmonary														
(22)	Visit every 6 months for patients with COPD	0.931 35532	0.931 2141	0.931 32666	0.920 * 17658	0.941 17874	0.917 * 17886	0.945 17646	0.918 * 10254	0.936 24576	0.925 * 7485	0.932 27345	0.919 1719	0.931 33063
(23)	Among patients with known COPD: subsequent admission for respiratory diagnosis	0.545 29917	0.506 * 1911	0.548 27249	0.564 * 15435	0.525 14482	0.549 13436	0.542 16481	0.559 * 8854	0.540 20503	0.543 6346	0.547 23011	0.549 1566	0.546 27760
(24)	Among patient with pneumonia: diagnosis of lung abscess or empyema	0.009 33520	0.009 2504	0.009 29858	0.013 # 14561	0.006 18959	0.012 # 13051	0.007 20469	0.009 9499	0.010 23400	0.010 6727	0.009 26172	0.007 1648	0.009 31220

Table 2-7. Clinically-Based Indicators of Access to Care for the Elderly (proportion of patients receiving care and number of patients with disease or condition) -- continued

		All	African American	White	Male	Female	Age ≤75	Age >75	Rural	Urban	HPSA	Not HPSA	Poverty Area	Not Poverty Area
Breast Cancer														
(25)	For patients with breast cancer and eventual mastectomy: interval from biopsy to definite therapy (surgery delay time) should be less than 3 months	0.645 989	0.523 61	0.653 911	0.545 11	0.646 978	0.690 # 525	0.595 464	0.690 267	0.630 708	0.624 187	0.652 788	0.463 # 49	0.657 926
(26)	Visit every 6 months for breast cancer patients who have undergone mastectomy and cytotoxic chemotherapy	1.000 114	1.000 17	1.000 95	1.000 2	1.000 112	1.000 87	1.000 27	1.000 25	1.000 88	1.000 25	1.000 88	1.000 9	1.000 104
(27)	Mammography every year for patients with a history of breast cancer	0.609 4844	0.514 # 256	0.617 4516	0.094 # 53	0.614 4791	0.668 # 2572	0.542 2272	0.596 1120	0.614 3655	0.591 802	0.614 3973	0.554 148	0.612 4623
(28)	At initial diagnosis of breast cancer, mammogram	0.644 1886	0.556 115	0.652 737	0.057 # 53	0.661 833	0.699 # 1029	0.578 857	0.639 477	0.643 1389	0.616 338	0.649 1528	0.551 76	0.646 1786
(29)	At initial diagnosis of breast cancer, chest x-ray	0.658 1886	0.705 115	0.653 1737	0.623 53	0.659 1833	0.641 1029	0.678 857	0.693 477	0.646 1389	0.708 * 338	0.648 1528	0.830 # 76	0.653 1786
(30)	Visit every year for breast cancer patients who have undergone mastectomy without cytotoxic chemotherapy	0.846 1275	0.779 66	0.850 1178	0.846 13	0.846 1262	0.842 645	0.851 630	0.832 345	0.852 914	0.823 245	0.852 1014	0.814 56	0.849 1203
(31)	Mammography every 2 years in female patients	0.386 104433	0.279 # 8894	0.406 91550	--- ---	0.386 104433	0.386 104433	--- ---	0.396 26347	0.390 75245	0.367 * 19894	0.397 81698	0.287 # 4993	0.397 96509

Table 2-7. **Clinically-Based Indicators of Access to Care for the Elderly** (proportion of patients receiving care and number of patients with disease or condition) -- continued

	All	African American	White	Male	Female	Age ≤75	Age >75	Rural	Urban	HPSA	Not HPSA	Poverty Area	Not Poverty Area
Diabetes													
(32) Glycosylated hemoglobin or fructosamine every 6 months for patients with diabetes	0.260 54159	0.201 # 6302	0.270 45799	0.266 * 22001	0.256 32158	0.288 # 28971	0.228 25188	0.233 # 14669	0.274 38209	0.230 # 11607	0.272 41271	0.182 # 3394	0.268 49425
(33) Eye exam every year for patients with diabetes	0.382 36814	0.311 # 4353	0.393 31448	0.360 * 14686	0.397 22128	0.364 * 20058	0.404 16756	0.349 # 10265	0.397 25667	0.367 * 7950	0.388 27982	0.338 # 2332	0.386 33565
(34) Visit within 4 weeks following discharge of patients hospitalized for diabetes	0.805 1059	0.737 # 171	0.821 847	0.802 429	0.808 630	0.809 661	0.799 398	0.812 305	0.802 713	0.794 256	0.807 762	0.665 # 84	0.814 934
(35) Visit every 6 months for patients with diabetes	0.931 44335	0.921 * 5199	0.932 37865	0.919 * 17924	0.939 26411	0.921 * 24109	0.943 20226	0.916 * 12267	0.936 31004	0.918 * 9540	0.934 33731	0.916 * 2796	0.932 40428
(36) Among patients with known diabetes: admission for hyperosmolar or ketotic coma	0.005 26178	0.011 # 3013	0.005 22327	0.004 # 10940	0.006 15238	0.003 # 12504	0.007 13674	0.003 # 7230	0.006 18369	0.004 5643	0.006 19956	0.010 # 1674	0.005 23900
Gastrointestinal Bleeding													
(37) Visit within 4 weeks following discharge of patients hospitalized for gastrointestinal bleed	0.789 1793	0.774 176	0.791 1571	0.794 861	0.784 932	0.786 784	0.792 1009	0.764 519	0.798 1232	0.776 357	0.791 1394	0.762 102	0.788 1647
(38) Hematocrit within 4 weeks following discharge of patients hospitalized for gastrointestinal bleed	0.616 1793	0.594 176	0.623 1571	0.631 861	0.602 932	0.624 784	0.610 1009	0.644 519	0.608 1232	0.597 357	0.623 1394	0.560 102	0.621 1647

Table 2-7. Clinically-Based Indicators of Access to Care for the Elderly (proportion of patients receiving care and number of patients with disease or condition) -- continued

	All	African American	White	Male	Female	Age ≤75	Age >75	Rural	Urban	HPSA	Not HPSA	Poverty Area	Not Poverty Area
(39) Followup visit within 4 weeks of initial diagnosis of gastro-intestinal bleed	0.823 6362	0.824 484	0.824 5736	0.818 2727	0.826 3635	0.823 3037	0.823 3325	0.804 * 1659	0.830 4608	0.819 1224	0.824 5043	0.797 253	0.824 5999
Anemia													
(40) For patients with iron deficiency anemia: gastrointestinal workup	0.389 5409	0.378 596	0.392 4693	0.424 # 2026	0.368 3383	0.402 2128	0.380 3281	0.369 1435	0.398 3879	0.372 1103	0.394 4211	0.336 # 302	0.394 5006
(41) Hematocrit/hemoglobin between 1 and 6 months following initial diagnosis of anemia	0.454 11596	0.460 1101	0.453 10249	0.462 4226	0.449 7370	0.442 * 5023	0.463 6573	0.458 2960	0.451 8460	0.448 2284	0.454 9136	0.431 621	0.454 10778
Other													
(42) Cholecystectomy (open or laparoscopic) for patients with cholelithiasis and one or more of the following: cholecystitis, cholangitis, gallstone pancreatitis	0.405 3643	0.332 # 231	0.413 3327	0.411 1328	0.401 2315	0.449 # 1896	0.357 1747	0.440 # 1110	0.391 2474	0.427 763	0.399 2821	0.390 197	0.405 3383
(43) Among patients with known cholelithiasis: diagnosis of perforated gallbladder	0.004 9331	0.002 595	0.004 8417	0.006 # 3438	0.002 5893	0.003 4770	0.004 4561	0.003 2661	0.004 6494	0.002 # 1912	0.004 7243	0.000 # 466	0.004 8680
(44) Arthroplasty or internal fixation of hip during hospital stay for hip fracture	0.857 4346	0.819 158	0.859 4075	0.853 944	0.858 3402	0.831 * 739	0.862 3607	0.879 * 1191	0.850 3110	0.858 789	0.858 3512	0.779 * 152	0.861 4143
(45) Visit within 2 weeks following discharge of patients hospitalized for depression	0.950 812	0.941 50	0.952 753	0.943 245	0.952 567	0.947 456	0.952 356	0.959 184	0.947 619	0.976 * 156	0.943 647	0.923 37	0.951 766

Table 2-7. **Clinically-Based Indicators of Access to Care for the Elderly** (proportion of patients receiving care and number of patients with disease or condition) -- continued

		All	African American		White	Male		Female	Age ≤75		Age >75	Rural		Urban	HPSA	Not HPSA	Poverty Area		Not Poverty Area
(46)	Visit every year	0.769	0.723	*	0.782	0.734	*	0.793	0.731	#	0.816	0.816	*	0.764	0.779	0.777	0.756	*	0.779
		340509	26579		300369	137491		203018	187866		152643	88630		242180	64878	265932	15959		314591
(47)	Assessment of visual impairment every 2 years	0.380	0.280	#	0.395	0.336	#	0.409	0.346	#	0.422	0.388	*	0.384	0.375	* 0.387	0.335	#	0.387
		340509	26579		300369	137491		203018	187866		152643	88630		242180	64878	265932	15959		314591

SOURCE: Physician Payment Review Commission analysis of 1992 and 1993 Medicare claims, 1 percent beneficiary file. Indicators developed by the RAND Corporation under contract with the Commission.

* Statistically significant difference at 5 percent level.
# Statistically significant difference at 5 percent level, 10 percent or more difference between populations.

NOTE: Acronyms in this table include myocardial infarction (MI), congestive heart failure (CHF), transient ischemic attack (TIA), cerebrovascular accident (CVA), and chronic obstructive pulmonary disease (COPD).

For African-American beneficiaries, certain patterns of care appear consistently across the diseases studied. These beneficiaries are less likely to receive followup after hospitalization regardless of disease: congestive heart failure (10), stroke (17), or diabetes (34).[10] Similarly, they are less likely to receive the services needed to monitor disease properly. These include an annual blood lipid profile after diagnosis of angina (7), annual mammography after breast cancer (27), and blood tests and eye exams for diabetes (32, 33). Finally, they are more likely to have emergency treatment and to suffer avoidable outcomes for previously-diagnosed diseases. They are more likely to have angina treated in an emergency room (8), to have an urgent or emergency admission for congestive heart failure (13), and to be hospitalized for diabetic coma (36).

Women and men sometimes differed in their patterns of care. Women were more likely to be seen in the emergency department multiple times for angina (8), but were less likely to be admitted to the hospital on an emergency basis for congestive heart failure (13). They were also less likely to be given an EKG after initial diagnosis of congestive heart failure (12), or to be given a GI workup upon diagnosis of anemia (40). For other acute health care episodes, men were more likely to have a lung abscess when admitted to the hospital for pneumonia (24), and to have a perforated gallbladder (43), while women were more likely to be admitted for diabetic coma (36)

Beneficiaries age 75 and over were more likely to have their cardiovascular problems treated in the emergency department (8) and to be admitted on a non-elective basis for congestive heart failure. Despite this, they were less likely to receive an EKG after diagnosis of congestive heart failure (12). In the treatment of breast cancer, the oldest old were less likely to receive a mammogram at initial diagnosis or for followup, and less likely to have surgery within three months of initial diagnosis. They were also less likely to receive a cholecystectomy for the treatment of gallbladder disease (42).

For rural beneficiaries, patterns of care were mixed. They were less likely to receive an EKG in many circumstances (12, 15). They were less likely to receive some services for monitoring of diabetes (32, 33), but were also less likely to be admitted to the hospital in diabetic crisis (36).

Living in a Health Professional Shortage Area (HPSA) appeared to have little impact on patterns of care, with only a single diabetes-related service (32) having a significantly lower level for HPSA residents than for others. In the past, the Commission found significant differences between urban and rural HPSAs, with urban HPSAs generally showing greater levels of problems. A lack of finding here may be related to the aggregation of urban and rural HPSAs in this analysis.

Beneficiaries in poverty areas often appeared to be more likely to receive services than other beneficiaries, but much of this may be due to the relatively small number of such beneficiaries in the sample. They consistently received less needed care for diabetes, and were more likely to be admitted to the hospital for diabetic coma. In addition, they were less likely to receive timely breast cancer surgery (25), and were less likely to receive preventive services such as mammography (46) or a routine eye exam (47).

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[10] The numbers in parenthesis are the labels for the access indicators as they appear in Table 1.

Interpretation

The absolute level of any given indicator should be interpreted with caution. In some cases physicians may reasonably disagree about whether a particular service is necessary. In other cases, claims data might not have enough detail to identify all services accurately.[11]

The most basic finding of this analysis is that Medicare beneficiaries often do not get the care that a panel of physician experts considered to represent a minimal quality standard. The significance of this is difficult to know without examining comparable data for the non-Medicare population. Most studies of the under-65 population have shown that the privately insured often do not receive the care that physicians believe is appropriate. Based on the Commission's other work on access to care, it is likely that Medicare beneficiaries are treated similarly to other patients, and that the low levels of use for these services are typical of Americans in general. If that is the case, then these results reflect system-wide patterns of use, not problems unique to Medicare.

Although the absolute level of any particular indicator may not be informative, consistent differences across vulnerable populations probably reflect real differences in the delivery of care. At this level, the results are consistent with prior Commission findings about the problems of vulnerable populations within the Medicare program. Not only did many vulnerable populations show significant gaps in the use of necessary services, in many instances the same groups had significantly higher rates of the related avoidable poor outcomes. This extends the Commission's previous finding that some populations get less care. This analysis goes further to show that they get fewer needed services and have poorer outcomes.

As noted above, this analysis does not identify the causes of this lower service use. But because many of these populations are associated with traditional access barriers (poverty, geographic isolation, lack of providers), it is reasonable to believe that at least some of the differential reflects lack of access to care. Substandard quality of care and lack of patient compliance may also play a significant role.

A third broad conclusion is that problems are greatest in the areas of preventive care, followup, and long-term monitoring of chronic conditions. With a few notable exceptions, such as the lag between diagnosis and treatment of breast cancer, and the diagnosis of gastrointestinal bleeding, Medicare beneficiaries get much more uniform treatment for health care crises than for chronic conditions. This finding is consistent with one of the major criticisms of fee-for-service medicine in general and Medicare in particular: it is oriented more toward treating acute conditions than toward maintaining health. Medicare, for example, pays for just four preventive services.[12]

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[11] For example, some diabetics might receive eye examinations as part of a routine office visit, which would not be counted in this indicator.

[12] These are screening mammograms, Pap smears, and pneumonia and influenza vaccines.

In addition, these indicators may provide a useful basis for monitoring changes in the performance of the Medicare system over time. As it has done with its analysis of quantity of care, the Commission can use these levels as a baseline against which to judge changes in service delivery in future years.[13]

Without knowing more about the underlying causes of these poor patterns of care, it is difficult to arrive at concrete policy recommendations. Documenting the levels of care and avoidable outcomes is only one step toward identifying solutions.

Although this analysis has focused on identifying poor access or quality, in the future more effort might be spent identifying particular models that work: the organizations, physicians, and locations where care seems to be delivered best. The Commission's analysis could look at the reasons why access is good for selected procedures or areas of the country. For example, Medicare beneficiaries discharged after hospitalization for depression almost always get followup care. It would be worthwhile to understand why followup for this condition is so much better than for other illnesses.

Finally, Medicare's Office of Research and Demonstrations (ORD) is funding a wealth of relevant projects in the area of monitoring and changing patterns of care. These include demonstrations of enhanced preventive care benefits, demonstrations of case management services, analysis of the effectiveness of the Medicare influenza vaccine coverage, evaluation of the Medicare SELECT preferred provider demonstration, major projects for profiling physician practice patterns, and many others.[14] These demonstrations and studies should receive more attention from the viewpoint of implementing changes in the Medicare program. Identifying and learning from the good models may be the best way to move Medicare toward the best practices in the health care industry.

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[13] Because these indicators rely to a large extent on the significant improvements in Part B diagnosis coding that Medicare implemented in 1991, they cannot easily be calculated in files from prior years.

[14] The Medicare project to develop and evaluate methods to promote ambulatory care quality (DEMPAQ) is an excellent example of quality indicators calculated from large claims data sets.

CHAPTER 3

PHYSICIANS SERVING BENEFICIARIES

In addition to analyses of beneficiary access to care, the Commission has also studied changes in the willingness of physicians to provide services to Medicare beneficiaries with claims data from a sample of physicians. The Commission's analyses of claims files, presented earlier in this report, that include information on a sample of *beneficiaries* provide information on whether beneficiaries are receiving services. Analysis of claims submitted by a sample of *physicians* allows us to measure the number of physicians serving beneficiaries, the concentration of beneficiaries among subsets of physicians, and the beneficiary case loads of physicians. By studying the physician willingness to care for beneficiaries, the Commission has gained an understanding of the extent to which beneficiaries may be experiencing difficulties finding a physician who will provide care since introduction of the Medicare Fee Schedule.

The analysis of the physician sample of claims does not show a decreased willingness of physicians to provide services to beneficiaries. This conclusion is based on the following findings, presented in this chapter:

- Ratios of physicians to beneficiaries are increasing.
- The concentration of Medicare patients among subsets of physicians does not appear to be increasing.
- Physician case loads of Medicare patients do not show decreases.

These findings, combined with the results of Commission-sponsored surveys of physicians which showed high levels of physician acceptance of new patients into their practices (PPRC 1994), suggest that Medicare beneficiaries are able to find physicians willing to provide services.

This chapter also shows that the supply of physicians' services is continually changing. A number of physicians stopped seeing Medicare patients between 1991 and 1993, but this number was offset by the number of physicians who started seeing Medicare patients during that period. Similarly, over the same two-year period, some physicians reduced their case loads of Medicare patients between 1991 and 1993, but more physicians increased their case loads. These changes in physician supply affect existing patient-physician relationships and explain some of beneficiary complaints about access problems described in earlier Commission access reports (PPRC 1993; PPRC 1994).

ANALYSIS OF A PHYSICIAN SAMPLE OF MEDICARE CLAIMS

Data used for this chapter are from Health Care Financing Administration's National Claims History Physician Sample File. While the file was designed to include all claims submitted by a sample of physicians, all claims do not appear in the file. Claims are included in the file based on a Unique Physician Identification Number (UPIN) assigned by Medicare carriers.[1] Since Medicare carriers varied in their reporting of UPINs on claims, particularly in 1991 and 1992 when UPIN reporting was not strictly enforced, we have used data from only those carriers with UPIN reporting of 90 percent or higher in 1991 and 1993. The 25 carrier areas (with boundaries usually corresponding to state boundaries) included in the analysis are: Alabama, Arizona, Arkansas, Connecticut, Florida, Hawaii, Idaho, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, and Virginia. Clearly, these areas are not fully representative of the entire United States. States in the Northeast and on the West Coast are not well represented, and no states from the upper Midwest are included. Nevertheless, qualified inferences about physician behavior are possible given the number of physicians represented in the provider file in these 25 areas.

While the data include claims from a 5 percent sample of all Medicare physicians in the United States, the percentage of physicians from each carrier area included in the sample varies to assure that a sufficient number of physicians were sampled in each state to permit development of state-level estimates. Among the 25 states included in this analysis, the sample percent varied from a low of 2 percent in Florida and Texas to a high of 22 percent in Montana.

Each unique carrier area/UPIN combination was considered to be a provider. As a result, a physician practicing in more than one carrier area could be counted as a different physician in each area. Counting providers in this way, 8,271 providers are represented in the physician sample file for 1991 and 9,034 are represented for 1993 in the 25 carrier areas considered.

Low-volume providers were dropped from the analysis on the assumption that they provided services to beneficiaries for only a short time during a year or provided services only on an emergency basis or as coverage for colleagues who were unable to treat patients due to illness, vacation, and so on. Based on the distribution of unique patients per provider, providers with fewer than 15 patients in a given year were dropped leaving 7,105 physicians in 1991 and 8,053 physicians in 1993.[2]

The measures used in the analysis are the following:

1) **Changes in Medicare physicians per 10,000 beneficiaries** - These ratios are carrier area-specific and are influenced by the general availability of physicians in an area as well as the willingness of physicians in those areas to serve Medicare beneficiaries.

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[1] Further information on the Physician Sample File data used in the analysis is in the appendix.

[2] To prevent the addition of new specialty codes in 1992 from affecting the analysis, the new codes were translated back to the codes used in 1991. To further limit the influence of changes in specialty assignment, each physician was assigned to the single specialty with the largest share of his or her allowed charges from 1991 through 1993.

2) **Entry and exit counts** - Although physician-to-beneficiary ratios can be used to measure the supply of physicians serving beneficiaries and how supply is changing over time, they do not explain very much about the number of new physicians serving beneficiaries and the number of physicians who stop serving beneficiaries. Entry and exit counts provide information on the underlying dynamics of physician supply. Coupled with information from the Medicare Physician Identification and Eligibility Registry on physician characteristics (e.g., age, medical school), these counts can increase understanding of why the supply of physicians providing services to beneficiaries is changing. The entry counts include those physicians with at least 15 different Medicare patients in 1993 but 0 to 14 patients in 1991. Consistent with the sample selection criteria explained earlier, the exit counts include those physicians with at least 15 different Medicare patients in 1991 but 0 to 14 patients in 1993.

3) **Gini coefficients** - The two measures described above change only when physicians drop all their Medicare patients. Better measures take into consideration the number of beneficiaries served. A Gini coefficient is such a measure since it can be used to measure the concentration of patients among physicians.[3] A change in the distribution of patients toward a relatively small share of physicians could mean that beneficiary choice of physician has become limited. On the other hand, some redistribution of patients toward physicians who care for the elderly or otherwise specialize in the care of Medicare patients may be desirable. In the absence of more historical data on trends in concentration of Medicare patients, changes in Gini coefficients must be interpreted with caution and monitored further in the future.

4) **Case load changes** - The access measures described above address access from an areawide perspective. The provider file can also be used to analyze the extent to which individual physicians are increasing or decreasing their case loads of Medicare patients. Such case load changes can help explain why some patients may have difficulty finding a physician, if they encounter a physician who is reducing his or her case load, even inareas where other measures suggest that access is improving. Only physicians with at least one claim in January and December of a given year were included in the analysis of case load changes to remove the influence of deaths and retirements.

Most of the measures were analyzed by physician specialty. Specialties were affected by physician payment reform in different ways (PPRC 1995). Physicians in medical specialties generally saw payment rate increases for their services between 1991 and 1993 since a relatively large share of their Medicare payments are derived from delivery of evaluation and management services, services with payment rate increases under the Medicare Fee Schedule. Physicians in surgical and other specialties generally experienced payment decreases between 1991 and 1993. Comparisons of the measures described above, by specialty, were used to see if there may be an association between introduction of the fee schedule and changes in access to care.

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[3] Gini coefficients are commonly used in the social sciences to measure the inequality of distributions.

Results

The ratio of physicians per 10,000 beneficiaries by specialty, averaged across 23 carrier areas, generally did not decrease between 1991 and 1993 (Table 3-1).[4] Among all specialties, the average ratio increased by 1.8 percent.[5] By specialty, the percent change in the average ratio ranged from -1.0 percent in orthopedic surgery to 4.7 percent in obstetrics/gynecology.

Table 3-1. Physician-to-Beneficiary Ratios by Specialty, 1991 and 1993

Specialty	Physicians per 10,000 Beneficiaries[a] 1991	1993	Actual Annual Percent Change	Expected Annual Percent Change[b]
All Specialties	100.4	104.0	1.8	1.6
Medical	55.6	57.8	2.0	1.7
General practice/family practice/ emergency medicine	26.6	27.5	1.8	
Cardiology	4.2	4.3	1.5	
Other medical	24.8	26.0	2.3	
Surgical	33.7	34.3	0.9	0.9
General surgery	6.0	6.2	1.8	
Orthopedic surgery	5.6	5.5	-1.0	
Obstetrics/gynecology	6.5	7.2	4.7	
Ophthalmology	4.4	4.4	0.2	
Other surgical	11.2	11.1	-0.6	
Other	11.1	11.9	3.3	2.1
Radiology	6.5	7.0	3.3	
All other	4.6	4.9	3.3	

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 23 of 25 carrier areas with highest UPIN reporting rates; American Medical Association 1992 and 1994.

[a] Includes only physicians treating at least 15 different beneficiaries in a given year.

[b] Average annual growth in nonfederal physicians in states included in analysis, adjusted for 1.8 percent average annual growth in beneficiary population in those states.

[4] Two carrier areas--Kansas and Missouri--were excluded from the calculation of physician-to-beneficiary ratios. The boundaries of these areas do not conform to state boundaries which makes counting of the beneficiary population in these areas difficult with available data.

[5] Counts of physicians in 1991 were adjusted upward by 5 percent to account for the difference between 1991 and 1993 UPIN reporting rates among the carrier areas in the analysis. From the perspective of comparing pre- and post-reform physician-to-beneficiary ratios, this is a conservative adjustment since it assumes that lower UPIN reporting rates translate directly into lower counts of physicians. Actual undercounting of 1991 physicians is probably less than 5 percent.

Growth in the number of physicians providing services to beneficiaries in the 23 carrier areas was compared to growth in the number of nonfederal physicians (physicians not employed by the federal government) in those areas (Table 3-1). By adjusting growth in nonfederal physicians for growth in the beneficiary population, an expected rate of growth in physician-to-beneficiary ratios was calculated. Across broad specialty categories (all, medical, surgical, and other), actual growth in physician-to-beneficiary ratios was at least as great as expected growth. These results suggest that growth in the number of physicians serving beneficiaries is similar to growth in the supply of all physicians.

Entry and exit counts show that, among physicians serving Medicare beneficiaries in 1991 or 1993, physicians who started seeing Medicare patients outnumbered those who stopped seeing Medicare patients by more than 2 to 1 (Table 3-2). With respect to characteristics of the new physicians, they were younger and were less likely to be board certified than were those physicians who stopped seeing Medicare patients.

Table 3-2. Entry and Exit of Physicians Serving Medicare Beneficiaries, 1991 and 1993

	Number of Physicians	Average Age (Years)	Graduate of Medical School in Same State (percent)	International Medical Graduate (percent)	Board Certified (percent)
Entry in 1993[a]	1737	38.4[b]	24.0	13.4	62.8[b]
Exit after 1991[c]	789	48.4[b]	23.3	12.4	68.7[b]
Served At least 15 patients in 1991 and 1993	6,316	46.1	33.1	10.1	72.0
Total	8,842				

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 25 carrier areas with highest UPIN reporting rates, and UPIN registry data.

[a] Physicians with at least 15 different Medicare patients in 1993 but 0 to 14 patients in 1991.

[b] Difference statistically significant at 5 percent level.

[c] Physicians with at least 15 different patients in 1991 but 0 to 14 patients in 1993.

Gini coefficients, by specialty, show little change in the concentration of patients among physicians between 1991 and 1993 (Table 3-3).[6] For all specialties, and among general specialty categories, changes in the coefficients were not significantly different from zero.

Table 3-3. Gini Coefficients Measuring Concentration of Patients Among Physicians, 1991 and 1993

Specialty	Average Carrier Area Gini Coefficients (n=25) 1991	1993	Change*
All Specialties	0.52	0.53	0.01
Medical	0.41	0.42	0.01
Surgical	0.52	0.53	0.01
Other	0.60	0.60	0.00

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 25 carrier areas with highest UPIN reporting rates.

* Changes not significant at 5 percent level.

NOTE: Gini coefficients range in magnitude from zero to one. The higher the coefficient, the greater the concentration of patients among a subset of physicians.

Comparisons of 1991 and 1993 case loads of physicians shows that, in general, physicians increased their Medicare case loads after the fee schedule was introduced (Table 3-4). Among all physicians, the median case load increased from 294 to 311, an increase of 5.8 percent between 1991 and 1993.[7] Median case loads of physicians in medical specialties increased from 323 to 354, or 9.6 percent, which is statistically significant. Case load changes of physicians in surgical and other specialties were not statistically significant.

[6] Gini coefficients range in magnitude from zero to one. The higher the coefficient, the greater the concentration of patients among a subset of physicians.

[7] The distribution of physician case loads is highly skewed by a small number of physicians with large case loads. This distribution makes the median a better measure of central tendency than the mean.

Table 3-4. Medicare Patient Case Loads by Specialty, 1991 and 1993

Specialty	Median Number of Different Beneficiaries[a] 1991	1993	Change
All Specialties	294	311	17[b]
Medical	323	354	31[b]
General practice/family practice/ emergency medicine	273	304	31[b]
Cardiology	578	626	48
Other medical	366	378	12
Surgical	230	232	2
General surgery	241	237	-4
Orthopedic surgery	227	247	20
Obstetrics/gynecology	59	61	2
Ophthalmology	783	841	58
Other surgical	308	312	4
Other	398	432	34
Radiology	1465	1596	131
All other	71	73	2

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 25 carrier areas with highest UPIN reporting rates.

[a] Includes only physicians treating at least 15 different beneficiaries in a given year and known to have been in practice in January and December of that year.

[b] Difference in medians significant at 5 percent level.

Despite the general increase in case loads, a number of physicians decreased their case loads between 1991 and 1993 (Table 3-5).[8] Among physicians known to have been in practice in January and December of both 1991 and 1993, 7.8 percent of all physicians decreased their case loads by 25 percent or more between 1991 and 1993. Such decreases varied by specialty, with physicians in specialties other than medicine or surgery being most likely to decrease their case loads by at least 25 percent. In all specialties, physicians were more likely to increase their case loads by at least 25 percent than to decrease their case loads by at least 25 percent (Table 3-5). Physicians decreasing their case loads were older than physicians increasing their case loads (Table 3-6).

[8] Case load changes could be the result of a change in coverage of some patients from fee for service to Medicare risk contracts.

Table 3-5. Physicians Decreasing or Increasing Case Loads by 25 Percent or More, 1991 and 1993

Specialty	N	Decreasing Case Loads at Least 25 Percent (percent)	Increasing Case Loads at Least 25 Percent (percent)
All Specialties	5,269	7.8	27.5
Medical	2,848	7.0	28.3
General practice/family practice/ emergency medicine	1,374	8.1	30.9
Cardiology	234	4.3	35.5
Other medical	1,240	6.3	24.1
Surgical	1,866	7.8	24.1
General surgery	335	11.6	17.6
Orthopedic surgery	323	8.7	22.6
Obstetrics/gynecology	356	6.2	40.5
Ophthalmology	239	7.1	18.0
Other surgical	613	6.5	21.2
Other	555	12.1	34.6
Radiology	359	11.4	30.9
All other	196	13.3	41.3

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 25 carrier areas with highest UPIN reporting rates.

NOTE: Includes only physicians treating at least 15 different beneficiaries in a given year and known to have been in practice in January and December of that year.

Table 3-6. Characteristics of Physicians Decreasing Case Loads by 25 Percent or More, 1991 and 1993

Case Load Change	Number of Physicians	Average Age (Years)	Graduate of Medical School in Same State (percent)	International Medical Graduate (percent)	Board Certified (percent)
Decrease of at least 25 percent	412	49.5*	26.7*	13.8	74.0
Increase of at least 25 percent	1,448	44.0*	36.1*	11.7	70.3
All other	3,409	47.5	33.8	8.7	72.0
Total	5,269				

SOURCE: Physician Payment Review Commission analysis of 1991 and 1993 Medicare claims, sample of physicians in 25 carrier areas with highest UPIN reporting rates, and UPIN registry data.

* Difference statistically significant at 5 percent level.

The results reported above must be interpreted with caution. As explained earlier, UPIN reporting rates vary by carrier area and over time. The measures used could be an artifact of improving UPIN reporting rates. Since the areawide access measures (physician-to-beneficiary ratios, entry and exit counts, and Gini coefficients) are not heavily influenced by the completeness of the physician sample file with respect to the claims submitted by each physician, those measures are less likely to reflect improvements in UPIN reporting. The case load measure is more directly influenced by completeness of the provider file and should be interpreted accordingly.[9]

With these caveats in mind, this analysis does not show notable changes between 1991 and 1993 in the access measures used. This conclusion applies to physicians in general as well as physicians in different specialties. Given that the fee schedule's effects on payment rates varied by specialty, there does not appear to be a clear relationship between physician payment reform and physician willingness to serve beneficiaries.

[9] To see how sensitive the case load change results are to the lower UPIN reporting rates in 1991, an alternative analysis was conducted with a 5 percent upward adjustment in 1991 case loads. In this alternative analysis, the all specialties case load increase was not statistically significant and the medical specialties increase was significant only at the 10 percent level. A decrease in surgical case loads and an increase in other specialty case loads was not significant.

CHAPTER 4

MEDICARE HMOS AND ACCESS TO CARE

This year the Commission began to consider how to modify its work in monitoring access to care to take into account growth in Medicare beneficiary enrollment in managed-care options. Medicare currently contracts with health maintenance organizations (HMOs) and competitive medical plans (CMPs) to provide Medicare-covered benefits for beneficiaries as an alternative to the fee-for-service sector.[1] The percentage of beneficiaries enrolled in these options is still relatively small, but is growing at a faster rate as beneficiary interest and options increase, and as more HMO enrollees age into the Medicare program. Given continued private-sector growth in managed care as well as Congressional interest in expanding beneficiary options, beneficiary HMO enrollment is expected to continue to increase. In response to this expectation, the Commission has begun to develop an approach for specifically evaluating Medicare HMO enrollees' access to care as a component of ongoing work in monitoring access for beneficiaries generally.

The first step in formulating the Commission's work plan in this area has been to identify issues relevant to monitoring Medicare HMO enrollees' access to care and to assess the ways in which those issues are distinct from those of monitoring access for beneficiaries in fee-for-service Medicare. As is the case in monitoring access for Medicare beneficiaries generally, the area of interest with respect to HMO enrollees is whether they are able to obtain needed services in a timely manner. Also as is true generally, the Commission's appropriate focus is on trends in access that can be discerned through evaluation of aggregate data and analysis of subgroups of the beneficiary and plan population, rather than on activity at the individual beneficiary, provider, or HMO level. Because of differences between HMO and fee-for-service incentives for providers and beneficiaries, substantively similar access issues may play out differently, however. Also, because of differences in the delivery systems and in the availability of relevant data, monitoring access for Medicare HMO enrollees will require a somewhat different approach.

This chapter's purpose is to introduce the issues that pertain to Medicare HMO enrollee access to care and to describe the Commission's plans for future work toward developing a system for monitoring access. It begins with a brief description of the Medicare HMO program. The specific issues relating to enrollee access to care that must be accounted for in a system for monitoring access are then described. The next section considers the data sources and measurement tools available for use in an access monitoring system. Finally, the Commission's plans for work over the next year toward developing a system for monitoring Medicare HMO enrollees' access to care are discussed.

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[1] Because the distinction between these two types organizations is not relevant to discussion in this chapter, the term Medicare HMO is used to encompass both HMOs and CMPs that contract with the Medicare program. In discussion of the Medicare HMO access monitoring system, the term is meant to also include a wider array of managed-care options that may be available to beneficiaries in the future.

BACKGROUND ON THE MEDICARE HMO PROGRAM

Medicare has two forms of HMO contracts that create different financial incentives for Medicare HMOs as they manage their enrollees' health care. The risk contract, authorized by the Tax Equity and Fiscal Responsibility Act of 1982, is the primary vehicle for HMO participation in Medicare. Risk-contracting health plans receive capitation payments, assuming full financial risk for enrollees' costs of care.[2] The other form is the cost contract. HMOs with cost contracts do not assume financial risk for their Medicare enrollees because they are paid retrospectively based on reasonable costs.[3]

HMO options are increasingly available to Medicare beneficiaries, with three-quarters (74 percent) now having a plan in their area (HCFA 1995a). Beneficiaries may choose HMO enrollment when they become eligible for Medicare or at other times that Medicare HMOs offer open enrollment. They currently have the option to disenroll from their plans at the end of any given month. Plans are prohibited from selecting beneficiaries on the basis of their health status or anticipated need for health services.

Enrollment rates have grown significantly in recent years, particularly in risk-contracting HMOs (Table 4-1). In 1994, almost 7 percent of beneficiaries were enrolled in risk-contracting HMOs and 2 percent were enrolled in cost-contracting plans. Enrollment rates vary widely across the country, with average enrollment ranging from virtually zero in 28 states to more than a quarter of beneficiaries in two states (Table 4-2). Virtually all HMO enrollees reside in urban areas.

Table 4-1. Trends in Medicare Health Plan Contracts and Enrollment Rates, 1990-1994

Contract	End of Calendar Year 1990	1994	Percentage Growth 1990-1994
Number of HMOs			
Risk contracts	85	154	81.2
Cost contracts	73	85	16.4
Total	158	239	51.3
Enrollment Rates (percentage)			
Risk contracts	3.3	6.6	100.0
Cost contracts	2.1	2.2	4.8
Total	5.4	8.8	63.0

SOURCE: Medicare Managed Care Contract Report, Health Care Financing Administration, Office of Managed Care, 1990 and 1994.

[2] These payments are established for each county at 95 percent of the adjusted average per capita cost for Medicare fee-for-service beneficiaries.

[3] Because they are paid on a capitated basis, risk contractors may have stronger cost-control incentives than cost-contracting HMOs. The different Medicare payment methods may not affect HMO incentives as much as would be expected, however. Many of the HMOs with cost contracts are capitated for their private-market enrollees, and they may manage care the same way for both private and Medicare enrollees.

Table 4-2. Enrollment Trends of Medicare Risk Contracting Plans for the Ten States with Highest Enrollment Rates, 1990-1994 (percentage of beneficiaries enrolled)

State	1990	1991	1992	1993	1994
Arizona	9	13	19	24	28
California	12	14	17	22	28
Oregon	14	16	18	20	22
Nevada	7	8	11	17	21
Florida	10	12	13	14	15
New Mexico	7	8	9	12	14
Colorado	8	8	9	10	13
Washington	8	8	9	9	11
Hawaii	9	9	9	9	9
Minnesota	9	9	9	9	9

SOURCE: Medicare Managed Care Contract Report, Health Care Financing Administration, Office of Managed Care, 1990-1994.

Most Medicare HMOs provide their enrollees with supplemental services in addition to Medicare-covered benefits, and many also eliminate deductibles and reduce beneficiary cost-sharing for services.[4,5] Beneficiaries in cost-contracting HMOs pay the cost of such additional benefits, but beneficiaries in risk-contracting HMOs often pay little or no extra premium beyond their Medicare Part B contribution.[6] In March 1995, for example, half of the 150 risk-contracting HMOs charged enrollees no premium at all. Of those that charged some premium, the rates ranged from $10 to $111 per month (HCFA 1995b). According to the Health Care Financing Administration (HCFA), a large majority of beneficiaries in risk-contracting HMOs pay premiums well below the levels of premiums for Medicare supplemental (Medigap) insurance (HCFA 1995a).[7]

[4] HMOs may offer one or more of the supplemental services approved by Medicare, which include dental services, outpatient prescription drugs, eye and ear care, foot care, health education, routine physical examinations, and extended mental health services.

[5] Nearly all Medicare HMOs charge their enrollees copayments for services, although these are likely to be lower than the 20 percent coinsurance rate in fee-for-service Medicare.

[6] Many risk-contracting HMOs are able to provide these benefits at low or no additional cost to the beneficiary because of the Medicare program's limits on permissible uses of any difference between Medicare's average per capita payment to the HMO for enrolled beneficiaries and the organization's per capita revenue requirements for providing services. Any such difference must be returned either to beneficiaries in the form of reduced premiums or enhanced benefits, or, at the plan's option, to the Medicare program in the form of lower per capita payments. Part of the difference may also in some cases be used to establish a fund to provide stability of benefits in future years.

[7] One issue for further investigation is the extent to which beneficiaries maintain existing Medigap policies following Medicare HMO enrollment and their reasons for doing so.

Managed-care plans seek to achieve cost efficiencies in the volume and mix of services they provide by emphasizing preventive services, performing active case management for individual enrollees, providing services in the least costly settings, or using other techniques to influence the provision of care. HMOs also may pass cost control incentives on to their participating providers through risk-sharing arrangements. These strategies, by improving the timeliness and appropriateness of care, may improve HMO enrollees' health status and reduce their need for invasive services or high-cost specialty care. An HMO could conceivably attain lower service volume, however, by placing overly restrictive constraints on beneficiary access to providers or by denying coverage of specific costly services.

ISSUES IN EVALUATING ACCESS TO CARE FOR MEDICARE HMO ENROLLEES

The Commission began monitoring beneficiary access to care upon implementation of physician payment reform because of expectations that reform could be accompanied by complex behavioral responses on the part of both physicians and beneficiaries (PPRC 1989). Expansion of managed care for beneficiaries presents similar uncertainties by introducing a different set of incentives along with a changed environment for the provision of care. With their incentives and orientation toward managing care, HMOs have a combination of features that could improve Medicare enrollees' access to high quality care. The incentives of a fixed budget, however, can either inspire innovation to manage care in the most cost-effective ways or lead to steps that may inappropriately restrict access. That the potential for an inappropriate response to cost control incentives exists does not mean it will occur, but it is the responsibility of a public program to monitor access to document that beneficiaries are benefitting from these arrangements.

The Need for a Multidimensional Approach to Evaluating Access

Because HMOs affect beneficiaries' experience in obtaining care on a number of levels, it is important that efforts to monitor Medicare HMO enrollees' access to care include assessment of access across a number of dimensions. It will be important to step back and look at the big picture, where possible, and, where the data permit, to undertake comparisons with beneficiaries in fee-for-service Medicare.

Looking strictly at service use will not provide a complete picture of Medicare HMO enrollee access, in part because service use will be lower in HMOs that successfully manage beneficiary care. Lower use of services among HMO enrollees may indicate reductions in inappropriate care, and thus increased quality, or may indicate a problem in access to needed services. Therefore, differentiation between services believed to be appropriate and those believed to be inappropriate is required to make meaningful comparisons of service use between HMO enrollees and fee-for-service beneficiaries. Also, differences in outcomes of care, including preventable outcomes, would provide valuable information. Because of the need to determine whether reduced volume is likely to have had a beneficial or detrimental effect on enrollee care, monitoring access for beneficiaries in HMOs will closely relate to monitoring quality of care.

Clinical indicators of appropriate care, such as the indicators developed by RAND in the Commission project discussed elsewhere in this report, can be a valuable part of an HMO access monitoring system.

Such indicators can be used in evaluating whether beneficiaries enrolled in HMOs receive the services appropriate to their condition or health status. Measures of beneficiary satisfaction with their HMO experiences will also be important in evaluating access, and can be helpful in interpreting the effects of lower service volume.

Vulnerable Populations

As the Commission has learned through its experience in monitoring beneficiary access to care in fee-for-service Medicare, there may be specific groups of beneficiaries who are particularly vulnerable to access problems, and any access monitoring system must consider these groups separately. As discussed elsewhere in this report, previously identified vulnerable groups include low-income beneficiaries, African Americans, and residents of designated Health Professional Shortage Areas. For members of these groups, enrollment in an HMO could have either a positive or negative effect on access to services (as compared with their access in fee-for-service Medicare), depending on the factors underlying their vulnerability and the degree to which HMO enrollment alters the effects of those factors.

An additional group of beneficiaries may be particularly vulnerable to access problems in a health plan that operates under a fixed budget: beneficiaries who are expected to incur high costs due to a chronic health condition or an acute health problem. HMOs have the potential to improve these beneficiaries' access to appropriate services through care management, and in doing so may reduce their need for services by keeping them healthy and treating health problems before they become critical. Where HMOs reduce the cost to beneficiaries of obtaining supplemental services, access to services for high-cost beneficiaries could be improved.[8] On the other hand, any inappropriate restrictions on service use would likely affect these beneficiaries disproportionately in terms of impaired clinical outcomes or increased mortality. Also, high-cost beneficiaries represent the most likely targets of any discriminatory marketing practices or other efforts to obtain favorable risk selection. A high-cost beneficiary who disenrolled from an HMO, either voluntarily or due to plan encouragement, could be subject to access problems stemming from discontinuity of care.[9]

TOWARD A SYSTEM FOR MONITORING HMO ENROLLEES' ACCESS TO CARE

The purpose of access monitoring is to generate information about Medicare beneficiaries' experiences in obtaining needed care. Structuring a monitoring process does not require making assumptions about the behavior of providers or health care organizations. Monitoring processes should be designed, however,

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[8] Other groups who face financial barriers to care in fee-for-service Medicare, notably low-income beneficiaries and those who lack supplemental insurance, could also enjoy increased access where HMOs lower those barriers.

[9] Because beneficiaries either return to the Medicare fee-for-service sector or switch to another HMO, disenrollment does not affect access to Medicare benefits. Disenrollment could, however, disrupt physician-patient relationships if beneficiaries leaving HMOs have to change physicians. Continuity of supplemental benefits also could be disrupted if beneficiaries do not have timely access to Medigap policies or Medicaid.

to identify when the incentives inherent in different payment systems lead to either overservice or underservice.

Design of a system for monitoring Medicare HMO enrollees' access to care should take into account a number of factors. A priority should be placed on choosing indicators and monitoring methods that address the most important access issues and avoid excessive financial burden for HMOs and for the system. Data collection and auditing capabilities must also be taken into account. Use of data collected for other purposes, such as for private-sector quality assessment initiatives, should be maximized.

A system for monitoring Medicare HMO enrollees' access to care should enable assessment of access across a number of dimensions. The system should permit monitoring of trends in access over time and identification of any potential access problems at various levels. The system should enable determination of whether beneficiaries enjoy a level of access comparable to those in the under-65 population who are HMO enrollees. It should also permit assessment of whether vulnerable groups have experiences that are different from the general Medicare HMO enrollee population. To the extent possible, the system should permit comparisons with beneficiary access in the fee-for-service sector.

The Commission has begun to review potential sources of data and information systems that could be used as components of a system for monitoring Medicare HMO enrollees' access to care. Compared with the relatively rich information on access that is available for Medicare fee-for-service beneficiaries, there is much less information available to monitor care for beneficiaries in HMOs. For example, the provider claims data and the survey data that the Commission uses in monitoring access in fee-for-service Medicare are not useful in monitoring access for HMO-enrolled beneficiaries. Virtually no encounter data are available for HMO enrollees because HMOs do not submit Medicare claims for individual services. Also, the Medicare Current Beneficiary Survey (MCBS) is not useful in monitoring access for HMO enrollees because the geographically based sampling method used does not provide a representative sample of these beneficiaries. Commission-sponsored surveys to date have not generated data specific to beneficiaries enrolled in HMOs.

The Commission has identified other sources of data that could potentially be used in a system for monitoring Medicare HMO enrollees' access to care. For instance, Medicare HMO enrollment data can be used to examine enrollment and disenrollment patterns, including rates of early disenrollment. This information, together with fee-for-service claims data for time periods following disenrollment, may be used to examine whether anticipated need for health services contributes to disenrollment patterns.[10] Another example of potentially useful data is that on beneficiary appeals to HCFA for reconsideration of HMO coverage decisions. Although these data are not suited for sophisticated analyses of access questions, monitoring trends in the number of appeals filed and the number of costly services denied could facilitate identification of potential access problems.

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[10] These information sources cannot provide representative information on high-cost enrollees, however, because they cannot identify individuals with chronic health conditions or health problems who remain in HMOs. They also cannot identify movement between HMOs.

Because existing data sources are likely to be inadequate for access monitoring requirements, the generation of new data will need to be explored. For example, a survey of beneficiaries with experience in Medicare HMOs--both enrollees and disenrollees--could provide useful information on beneficiary perceptions, satisfaction, and experience with service provision in Medicare HMOs. Some questions used in the survey should parallel those on the MCBS, to permit comparisons with beneficiaries in fee-for-service Medicare, where appropriate. Other data that would permit analysis of access issues include data on quality and access, such as is now being generated for HCFA in a pilot project conducted by the Delmarva Foundation. The project involves development of performance reports on individual Medicare HMOs, but the information culled from plans' administrative databases and enrollees' medical records could potentially serve in a systemwide monitoring capacity as well.

NEXT STEPS: THE COMMISSION'S WORK PLAN

The Commission plans to work over the next year to refine the access issues that have been identified and to move toward development of a system for access monitoring. Work on both of these fronts will entail consultation with representatives of the beneficiary, provider, and managed-care communities as well as with HCFA. To foster development of an efficient system that can advance with the state of the art and that avoids duplication of effort, the Commission will closely monitor efforts to assess access and quality of care for managed-care enrollees that are under way in the private sector.

A number of specific areas will be the subject of further inquiry. Projects in several of these areas are now in the planning or development stage, including:

- *Exploration of access measurement indicators and capabilities.* As part of this work the Commission will assess which indicators measure access most effectively and efficiently. Approaches to assessing the capacity of HMO information systems to generate the data needed to use relevant indicators will also be explored.

- *Development and testing of a questionnaire for use in surveying Medicare beneficiaries enrolled in or disenrolled from HMOs.* This survey would develop baseline information on access issues and would generate information on how the MCBS could be modified to permit regular collection of information specific to HMO enrollees.

- *Examination of selection issues.* This work will involve analysis of HMO disenrollment patterns and fee-for-service costs of care for beneficiaries immediately following disenrollment from HMOs, with an emphasis on high-cost beneficiaries.

- *Exploration of methods for identifying and monitoring high-cost HMO enrollees.* Several possible data sources for further investigation have been suggested, including survey data and data on utilization of certain prescription drugs.

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APPENDIX

DATA AND METHODS

This appendix describes the data and methods used in this report. The two principal data sources are the Medicare Current Beneficiary Survey and Medicare claims data. Methods varied by analysis depending on the data source and the purpose of the analysis.

MEDICARE CURRENT BENEFICIARY SURVEY

The MCBS, which began in 1991, is a longitudinal survey of about 12,000 Medicare beneficiaries. The core survey and its supplements, sponsored by Health Care Financing Administration's (HCFA's) Office of the Actuary, include information on utilization of services, expenditures, health insurance coverage, access to health care services, satisfaction with care, health status, and physical functioning, as well as demographic information. HCFA's release of MCBS results combines survey data and Medicare claims data for survey participants.

The MCBS sample was constructed to be representative of the Medicare population as a whole. The oldest-old (over 85) and the disabled under 65 were oversampled because the sample size would otherwise be too small to draw policy and research conclusions about these populations. Additional beneficiaries are added each year to replace those no longer in the sample because of death, emigration, or refusal to participate. These supplemental samples include both newly and previously enrolled Medicare beneficiaries. Of those beneficiaries interviewed in the original 1991 survey, 82 percent completed it in 1992 and 73 percent completed it in 1993. Using the 1992 sample, which includes some participants from the original survey and some from the supplement, one can make an additional longitudinal comparison. Of those interviewed for the 1992 survey, 88 percent participated again in 1993.[1]

MEDICARE CLAIMS

Beneficiary Sample

Claims data used in Chapters 1 and 2 of this report consisted of all physicians' services claims for a 5 percent sample of beneficiaries. Claims were tabulated by the Medicare carrier area in which services were delivered, and all analysis was conducted by the location in which the service was delivered.[2]

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[1] About 8 percent of the MCBS sample were institutionalized at the time of the survey. Since responses to some questions are not available for these beneficiaries, they were excluded from the analysis.

[2] The location in which the service is delivered sometimes differs from the location in which the beneficiary lives because beneficiaries, particularly those in rural areas, sometimes travel some distance to see a physician.

Three factors add a measure of uncertainty to the data used. First, the procedure codes used for visits and consultations from 1992 through 1994 are completely different from those used in 1991. To analyze the data, the old codes were translated to the new ones using a crosswalk, or algorithm, developed by HCFA. Any inaccuracy in this translation adds a significant margin for error in the analysis of changes in visit services. Second, these files are incomplete as they include only those claims processed by September of each year, or three months beyond the half-years under study.[3] Analysis of the distribution of claims per month shows, however, that the proportions of claims per month in 1994 are similar to those in the other years, suggesting that the files are about equally complete. Estimated growth in the use of services will reflect both the true change in use of services and any small variations in the completeness of the files, because of changes in claims processing.[4] Finally, because a 5 percent sample of claims is used in the analysis, the payment rate and service use measures presented are subject to sampling error. These errors are likely to be greatest with respect to those procedures that are responsible for relatively small shares of outlays for physician services.

Physician Sample

Claims data used in Chapter 3 of this report included claims submitted by a sample of physicians providing services to beneficiaries. Because of variation in Unique Physician Identification Number (UPIN) reporting by Medicare carriers, only claims processed by carriers with UPIN reporting rates of 90 percent or higher in 1991 and 1993 were used in the analysis.

To identify the carriers with the highest UPIN reporting rates, a sample of claims data selected without regard to UPIN reporting was used. Claims data from a 1 percent sample beneficiaries were used for this purpose. To calculate UPIN reporting rates, provider UPINs reported with the claims were compared to UPINs included in HCFA's UPIN registry. UPIN reporting rates were calculated as the percentage of allowed charges and the percentage of units of service by Medicare carrier. The allowed charges rate varied from 27 percent to 94 percent, and the units of service rate varied from 15 percent to 93 percent. Since the units of service rates were lower than the allowed charges rates, it appeared that UPIN reporting was poorest for services with relatively low payment rates (e.g., many pathology services). After claims from pathologists were excluded, a group of 25 carriers with UPIN reporting rates of at least 90 percent from 1991 through 1993 was identified for the analysis.

Claims submitted by sample physicians for interpretation of electrocardiograms were excluded. As a result of implementation of the Omnibus Budget Reconciliation Act of 1990, Medicare Part B payments for such interpretations were bundled with payments for visits and consultations beginning in 1992. An effect of this policy change was that physicians stopped submitting separate interpretation claims in 1992. For purposes of access measurement, Medicare Part B claims files no longer include information on beneficiary use of this service. Excluding claims for interpretation of electrocardiograms provides a common basis for comparison of access in 1991 and 1993.

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[3] This cutoff was necessary because the most recent 1994 data included only those claims processed through September 1994. The same cutoff was used with the 1991-1993 data to ensure comparability with the 1994 data.

[4] A number of other factors also lead to some uncertainty, including changes in the global surgical service period and the bundling of certain services, such as electrocardiogram interpretation, into the office visit.

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